

A case for Bhubaneswar: Why an NIS/IISER should be established in Bhubaneswar, Orissa?

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India is economically shining as a whole. But it is falling behind in science and technology, especially in research. According to [1], the best Indian university, IISc Bangalore is grouped at 300-400 internationally. The next best, IIT Kharagpur is grouped 400-500 internationally. Within Asia they are grouped 37-65 and 66-93 respectively. For a long time India had 5 IITs and one IISc. Since then even though one new IIT has been established at Guwahati and University of Roorkee has been made to an IIT, with large population increase and with India falling behind in Science, there is a need for more IISc (and possibly even IIT) like institutions. Moreover with India's economy doing well now, India can financially afford to create several more IISc like institutions. The Indian government, scientists and academicians all are aware of the above and thus there are plans to create more IISc like institutions. In this context on 9th December 2003, the then HRD minister Professor M. M. Joshi had announced [2,3] that UGC has established steps to initiate four National Institute of Sciences (NIS) at Bhubaneswar, Chennai, Pune and Allahabad. Recently [4], Prime minister Dr. Manmohan Singh announced the setting up of two Indian Institute of Science Education and Research (IISER), which are the same in all but name to the NIS, at Pune and Kolkata, respectively.

Since it is a consensus that India needs more high quality institutions like or better than the existing IISc, one of the important questions that arises is where should these new institutions be established. Two main principles, with some possible tension among them, need to be followed in the determination of locations.

1. For all around growth of India the institutions need to be distributed across the country. (In this regard recently PM Dr. Singh, in [5], addressed the regional imbalance issue in terms of educational institutions and said "I trust our government as well the state governments will take note of these findings and evolve policies to remedy these regional imbalances.")

2. The institutions need to be located in places where it will have the largest impact and where it will benefit India as a whole the most. (i.e., the biggest bang for the buck.)

Based on the marginal utility principle where the marginal satisfaction of eating a second rosogolla is much less than eating the first rosogolla, it is clear that biggest bang for buck of a new NIS/IISc will be in a location or state which does not have such an institution yet. But among these places the following criteria becomes important:

3. The institution should be located in a place that can nurture it locally, that has the promise to nurture it locally and that benefits the local population also, so that the local population has vested interest in supporting such an institution.

Finally, because of the urgency of establishing such institutions, we need to consider the issue of:

4. Whether the location and the local and state government can help in the quick establishment of such an institution?

We will argue here that Bhubaneswar, Orissa satisfies all the above criteria, and if they are all taken into account it comes out in the top among all cities in India.

(1) Currently Orissa does not have a central university [6], an institution of national importance (such as IITs, ISI, etc.) [7], a reputed centrally funded institute such as an IIM, or a centrally funded IIIT or IIITM. It also does not have an autonomous science and technology institution [8] of the department of science and technology.

(2 and 3) We will address the issues 2 and 3 through two points. (a) Orissa government and the people of Orissa have helped create several top notch institutions in Bhubaneswar, Orissa which do world class research; and (b) An IISc/NIS in Bhubaneswar will tremendously benefit the local population, thus they will have a vested interest in nurturing it.

(a) Orissa government and the people of Orissa have helped create several top notch institutions in Bhubaneswar, Orissa. Notable among them are the Institute of Physics, the Xaviers Institute of

Management and the Institute of Life Sciences, all in Bhubaneswar. We now describe these institutes using phrases from their web pages.

The Institute Of Physics, Bhubaneswar is an autonomous research institution funded jointly by the Department Of Atomic Energy (DAE) and the Government of Orissa. The Institute was officially established in 1972 by the Government of Orissa [9]. Research at Institute of Physics is top notch by international standards. Its alumni [10] have gone on to many good institutions all over the world. Many of its faculty and students have preferred it over an IIT. Its annual report [11], publication list [12], faculty vita, and alumni biography [10] are testament to the quality of this institution in Bhubaneswar.

The Xaviers Institute of Management [13] owes its origin to a Social Contract between the Government of Orissa and the OJS (Orissa Jesuit Society). It was established in 1987, and ranks among the top business schools in India [14]. This year's Outlook magazine ranks it 8 in the country among various business schools, including the IIMs. It has faculty with Ph.Ds from top business schools such as University of Massachusetts, and Stern School of Business, NYU, New York. It also has a fellows program which is equivalent to Ph.Ds.

The Institute of Life Sciences, an initiative by the Govt. of Orissa, Department of Science and Technology started a decade back. On August 2, 2002 it came under the administrative and financial control of Department of Biotechnology, Government of India. It was dedicated to the nation on July 15, 2003 by the Prime Minister of India with a declaration to develop it as "National Centre of Excellence" engaged in research on various areas of modern biology. The researchers of this institute publish often in international journals [15].

To reiterate, the above three institutions were created by the foresightedness of the Government of Orissa, and are now premier research institutions, albeit with limited focus, but doing world class research and teaching. Besides these three there are several other research institutions in and around Bhubaneswar that do very good and useful research. This includes the Regional Research laboratory (RRL) [17] in Bhubaneswar, the Regional medical research center (RMRC) [18] (see page 123 - 125) in Bhubaneswar, the Central Rice research institute (CIRRI) [19] in Cuttack, the central institute of fresh water aquaculture (CIFA) [20,21] in Bhubaneswar, and the national institute of rehabilitation training and research [22] in Olatpur. In additions two fledgling institutions, the Institute of Material sciences [23] and the Institute of mathematics and application [24] have been established by the Government of Orissa and are in their beginning stages.

The above illustrates, how Bhubaneswar and Orissa have established and nurtured top notch research and educational institutions. Thus one can extrapolate and conclude that with high probability an NIS/IISER in Bhubaneswar will be very successful and well nurtured. Nevertheless, as we mentioned earlier, it is important that an institution like NIS/IISER should have some significant benefit to the local population, lest the local population feel alienated by it.

(b) In the greater Bhubaneswar area (which includes Puri and Cuttack) there are now 2 state funded and 19 private engineering colleges. An NIS/IISER in Bhubaneswar will benefit these institutions as a place where the faculty of the local colleges can pursue higher education (without moving away and thus negatively affecting their parent institutions), the local colleges can recruit high quality faculty from among the NIS/IISER graduates, and the students of the local colleges can pursue summer research and training at the NIS/IISER. Besides Bhubaneswar and its vicinity have a large range of industries with many more industries set to come. This includes metal based industries such as NALCO and the Kalinganagar complex to software companies such as Infosys and Satyam, and planned operations of TCS, and Wipro. There will be significant synergy between these industries and the proposed NIS/IISER in terms of joint research, students of NIS/IISER pursuing practical training at the industries, and employees of the industries pursuing higher degree at the NIS/IISER. In addition Orissa has two STPs (at Bhubaneswar, Rourkela), and one more STP in Berhampur in the making, which will provide opportunities to the graduates of the NIS/IISER to incubate start-up companies. Thus, with great benefit potential of an NIS/IISER to the local population and the benefit to the NIS/IISER from existing infrastructure, Bhubaneswar is an ideal place for establishing an NIS/IISER.

Now moving on to the final point, because of the urgency an NIS/IISER can be immediately started in Bhubaneswar by using some of

its existing infrastructure.

(4) In particular, the Institute of Physics and the Institute of Life Sciences can be the starting point of an NIS/IISER. The picturesque Institute of Physics campus can be used to start an NIS/IISER right away. As mentioned earlier, Bhubaneswar also has the beginning of an Institute of Material Science, and an Institute of Mathematics and Applications, which may be folded into an NIS/IISER. If an NIS/IISER is started in Bhubaneswar, the Institute of Physics and Institute of Life Sciences faculty can form the initial core faculty and teach the first classes until the institute hires additional faculty. The researchers at Regional medical research center, and Regional research laboratory can also chip in.

Conclusion: In summary, Bhubaneswar is the best in the country with respect to the various criteria necessary for the next location of an NIS/IISER. It is clear that for that reason, in December 2003, the then HRD minister Professor M. M. Joshi had announced [2,3] that UGC has established steps to initiate one of the four National Institute of Sciences at Bhubaneswar. Unfortunately, for some reason the recent announcements for IISER did not include Bhubaneswar. Although this injustice needs to be corrected for many other reasons, by its own merit, as we elaborated in this article, Bhubaneswar, Orissa deserves an NIS/IISER immediately and we sincerely hope the central government will agree with us and pursue this at the earliest.

Postscript: All or most of the above arguments also hold for establishing a new IIT in Orissa. But since that does not seem to be in cards at this time, we do not elaborate on it. Also, in our arguments we have focused on the key issues and do not mention many other synergies such as the existence of other fine universities (Utkal University, and Orissa University of Agriculture and Technology) in the Bhubaneswar area.

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- [1] <http://ed.sjtu.edu.cn/ranking.htm>
- [2]. [http://www.ugc.ac.in/pub/jan\\_2004/12.htm](http://www.ugc.ac.in/pub/jan_2004/12.htm)
- [3].  
<http://pib.nic.in/archieve/lreleleng/lyr2003/rdec2003/10122003/r1012200313.html>
- [4]. <http://pib.nic.in/release/release.asp?relid=12305>
- [5]. <http://in.rediff.com/news/2005/sep/28pml.htm>
- [6]. List of central Universities  
<http://www.ugc.ac.in/inside/utype.php?st=Central%20University>,  
<http://www.education.nic.in/htmlweb/autbod.htm> (NONE in Orissa)
- [7]. List of Institute of National Importance from  
<http://www.ugc.ac.in/inside/utype.php?st=Institute%20of%20National%20Importance>  
(NONE in Orissa)
- [8]. List of autonomous Science and Technology Institutions from  
[http://dst.gov.in/autonomous/autonomous\\_index.htm](http://dst.gov.in/autonomous/autonomous_index.htm) (NONE in Orissa)
- [9] <http://www.iopb.res.in/overview.php>
- [10] <http://www.iopb.res.in/~alumni/members/members.html>
- [11] [http://www.iopb.res.in/~library/ar\\_02\\_03/](http://www.iopb.res.in/~library/ar_02_03/)
- [12] [http://www.iopb.res.in/~library/ar\\_02\\_03/Publications.pdf](http://www.iopb.res.in/~library/ar_02_03/Publications.pdf)
- [13] <http://www.ximb.ac.in/about/>
- [14]<http://www.orissalinks.com/#ximb>
- [15] <http://www.ilsc.org/>
- [16] <http://www.ilsc.org/publication.htm>
- [17] <http://www.rrlbhu.res.in/publication.html>
- [18] <http://www.icmr.nic.in/000517/ann2002.pdf>
- [19] <http://crri.nic.in/accomplishments.htm>
- [20] [http://www.stpbh.soft.net/cifa/list\\_of\\_extfundedproject.doc](http://www.stpbh.soft.net/cifa/list_of_extfundedproject.doc)
- [21] [http://www.stpbh.soft.net/cifa/insti\\_based.doc](http://www.stpbh.soft.net/cifa/insti_based.doc)

[22] <http://nirtar.nic.in/>

[23] <http://orissagov.nic.in/sciencetechnology/ims.htm>

[24] <http://orissagov.nic.in/sciencetechnology/ima.htm>