Science partnerships for change

What the world needs now…

It's 28th August at the 2008 Awards Ceremony of IIASA's Young Scientists Summer Program (YSSP). Suddenly, there's uproarious laughter as the YSSP Dean, Mahendra Shah, shows "before" and "after" photographs of the soon-to-go-home YSSPers.

For some YSSP participants, the time spent at IIASA represents their first major stay outside their home country. The "before" photos are a series of glum-looking individual student "mug shots" taken on 1 June on the YSSPers' arrival in Austria for the summer program. The "after" or, more accurately, "during" photos are of young scientists in multinational groups, at work and at leisure, visibly confident, and having the time of their lives. As intended, for the 49 PhD researchers from some 20 countries, the three months spent at IIASA have been transformational.

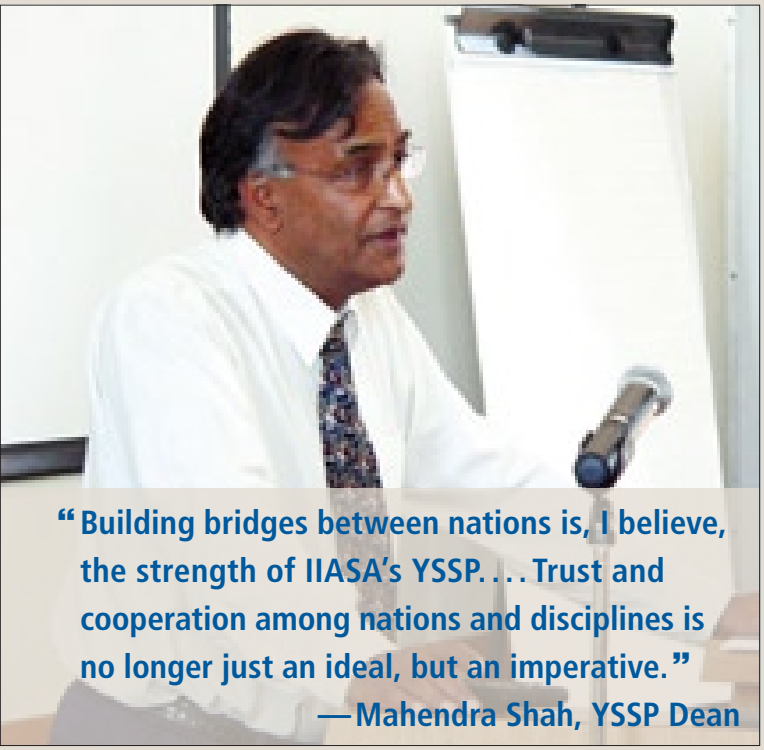
The YSSP epitomizes, indeed enhances, IIASA's reputation for multinational and inter-disciplinary research. The participants find the international atmosphere stimulating, and they quickly accept the multidisciplinary approach to tackle "real world" problems as well as interacting and networking with each other and with IIASA resident scientists.

Science diplomacy towards bridge building

"Working in the IIASA environment entails being tolerant of each other's viewpoints and open to a diversity of ideas," says Shah. In fact, Dr. Shah believes strongly in the concept of science as a form of diplomacy to build international collaborative partnerships. He mentions Karen Hughes, recently retired U.S. presidential adviser on public diplomacy, who has publicly proclaimed the unifying power of science.

Says Shah: "Although we live and work within nations, our impact is far wider—regional, if not global. What are we to do if we can't cooperate with each other? How will we save this world of ours? Building bridges between nations is, I believe, the strength of IIASA's YSSP."

Indeed, the establishment of IIASA some 35 years ago was proposed to break down Cold War barriers; the YSSP followed four years later with its dual emphasis on bringing young researchers with fresh ideas to IIASA while developing a new generation of scientists to carry forward the unique IIASA approach. New antagonisms have replaced the Cold War—as have new priorities for IIASA—but it is heartening to witness "science as diplomacy" in action during the summer months at IIASA, as friendships and networking form among individual young scientists that are not necessarily reflected in the dealings between their governments.



"Building bridges between nations is, I believe, the strength of IIASA's YSSP. . . . Trust and cooperation among nations and disciplines is no longer just an ideal, but an imperative."
—Mahendra Shah, YSSP Dean

The relationship between India and Pakistan, for instance, has been troubled for many years. However, the accession of the two countries to IIASA on 1 January 2007 has given practical reasons for extended cooperation, with the YSSP serving as one of the avenues to improved relations. In 2007, Indian and Pakistani YSSPers worked together in their "spare time" to survey and document a wide variety of the botanical specimens to be found in and around Laxenburg, particularly the 280 hectare imperial park. Another 2007 YSSPer, Dorothy Dankel from Bergen, Norway, blogged her impressions of her international colleagues: "Everything's going really well here in Austria. I'm settled in both in the hostel with my roommate Heidi from England and with my 50 new colleagues at the Institute. We're all in a castle, the former summer castle for hunting for the Austrian Royal Family. . . . Pretty cool." She later adds, along with a smiley emoticon: "All the YSSPers are so nice and it's fun being amidst so many smart people."

In 2008, two Pakistanis and one Indian participated in the YSSP. Pushpendra Rana of the Indian Forestry Service researched ways of improving the social and economic benefits of forestry through better forestry governance procedures. Tahira Munir from Islamabad and Syed Zaidi from Lahore both studied aspects of climate change: Munir looked at pollution and greenhouse gas emissions, including ways of reducing negative health impacts from indoor air pollution; Zaidi focused on how future climate variables could affect management of water resources in the Jhelum River Basin of Pakistan.

It is not just in formal research sessions that the paths of young scientists from different countries and cultures cross. The living arrangements, hiking, excursions to tourist attractions, and social events organized at IIASA also provide opportunities for "bonding." YSSP participants organize their own off-duty experiences—and not just expeditions to the local *Heuriger*.

Partnership imperatives for an interdependent world

According to Mahendra Shah, one of the YSSP's most important aspects is that YSSP participants come to IIASA with a project proposal closely related to research at their home institutions and take home their summer research results, along with the new interdisciplinary scientific skills and policy-relevant research methods they have learned at IIASA. "This is particularly important for developing countries," says Shah, "where inter-disciplinary and policy-relevant scientific capacity building is critical to find home-grown solutions. This is probably why many YSSP participants tend to gravitate back to IIASA, either as postdoctoral students or as researchers. IIASA allows people to work in an international setting to do hands-on research that benefits their home country or region. The IIASA experience contrasts with the risk of brain drain when developing country research students go to centres of excellence in developed countries, often researching on issues that have little relevance to pressing problems in their home countries."

Former YSSPers also come back or continue to participate with IIASA projects in other ways. At the time of this writing, among the latest additions to the Institute from the YSSP "gene pool" are: in the Dynamic Systems Program, Russian Denis Pivovarchuk (2007) researching optimal control systems; and in the Forestry Program, Ukrainian Mykola Gusti (2000) looking at greenhouse gas cycling and terrestrial ecosystems.

Science, diplomacy, and international negotiations

That science can facilitate diplomacy has been known for decades. IIASA's own RAINS model—the first computer model to be at the center of major international environmental negotiations—led to the Convention on the Long-range Transboundary Air Pollution, the success of which was due to the close collaboration that took place between the scientists and policymakers who negotiated it. The RAINS model was chosen as the standard because of the political neutrality of IIASA. It was this aspect that fostered trust among the countries that would develop policies based on its findings.

Mahendra Shah believes that part of the mission of the YSSP is to bring home to young scientists that the world's problems are now so complex that they cannot be solved by individual countries working in isolation or via one stand-alone scientific discipline. Mutual trust is thus vital. "The countries of the world are interdependent," he says, adding: "According to projections, the tipping point after which climate change will be irrevocable will come in approximately 40 years. It is up to the current generation of scientists not only to find solutions to the problems of global change but to work with policymakers to ensure that that the right measures are implemented. Trust and cooperation among nations and disciplines is no longer just an ideal," he adds, "but an imperative." ■

Further information IIASA's Young Scientists Summer Program at www.iiasa.ac.at/yssp

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