Project Team Newsletter
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gest
global ethics in science and technology

GEST is a 3-year Collaborative Project funded by the European Community's Seventh Framework Programme under grant agreement 266592 from 1 February 2011—31 January 2014

Beijing Meeting

GEST's third plenary meeting took place in Beijing on 6-7 September 2012 at CASTED. The project partners were joined by Davi Noboru Nakano and Rafael Grilli Felizardo from the university of Sao Paulo, Brazil, Ben Durham from the Department of Science and Technology, South Africa, and Timea Balogh the project officer from the European Commission.

The first day discussions focused on the comparison of the values systems in the three regions, the state of art in South Africa and Brazil, the concept of Translational Ethics and content of the project report on Best Practices. Values systems were found to differ in concept description in the three regions but also overlapping significantly. Notwithstanding differences in application that are found even in Europe (e.g. the example of pre-implantation diagnostics), a direct comparison between values is deemed plausible in the three case studies of the project. State of art in Brazil and South Africa showed a different set of values in the African context (i.e. Ubuntu) and a different setting in priorities for both countries based on the reality of extreme socio-economic imbalances and health issues. Translational Ethics was presented as a new concept in ethics that could describe part of the aspirations of the project but was deemed too ambitious for usage in the Technology Assessment context that the project works in. Finally, the report on Best Practices will focus on the detailed comparison of the state of art in the three regions and the introduction of the comparative framework.

The second day was dedicated to the description of the three case studies and the preliminary application of the comparative framework in their analysis. All three applications in all three regions were analysed according to the discourse categories of the framework and partners were satisfied with the viability of this process. The suggestion to use the Reflective Discourses as a meta-analysis and keep the focus on the three Content Discourses in the main analysis was accepted by the group.

The next project plenary will take place at ITAS in Karlsruhe on 18-19 April 2013.

Photo left: The GEST project plenary meeting in Beijing underway.

Europe-China Grand Socio-technical Challenges

In addition to the main GEST plenary meeting and in affiliation to it, two international workshops were organized in Beijing to promote the ties that are created between Europe and China through the project and eventually create a permanent platform of exchange in the area of Technology Assessment.

The first workshop titled "Europe-China Grand Socio-technical Challenges" was organized by the partners RATHENAU, CASTED and KIT. The theme of the one-day workshop was based on the shared reality in both Europe and China that witness potentially disruptive developments, such as an ageing society, global warming, increasing stress on food and other supplies and new infectious disease outbreaks on a global scale. On the other hand both regions experience promising technological developments, such as automated care, clean tech, intensifying digital communication and revolu-

tionary medical treatments. Many societal issues in general are intimately connected with technological developments; they may be solved, improved or exacerbated by technology.

The workshop specifically addressed the social aspects of the grand challenges in relation to policy making. The reasoning being that policy makers confronted with these socio-technological challenges will need to deal with both the technological as well as the social aspects. If policy makers can understand the social dynamic surrounding certain grand techno-social challenges, they may arrive at appropriate policies in due time. They are also then able to prepare society for change. Such policies should not only include a view on how to stimulate desirable technological developments and their societal embedding, but also address how citizens' perspectives may be included in policies.

Multidisciplinarity

The second workshop entitled "China-Europe Workshop on Multidisciplinarity" was organized by partners RATHENAU, KIT and the Chinese Academy of Social Sciences. The theme of the workshop was based on the need to combine knowledge generated by different disciplines in order to face the complex large-scale challenges faced by modern society. The reasoning being that science and innovation are expected to solve complex problems such as climate change and ageing that are characterized as affecting a large array of actors, relating to high potential impacts and a large degree of uncertainty. The resulting heterogeneity means that the production of knowledge and innovation becomes more complex as well.

Large-scale complex problems demand a more multidisciplinary and interdisciplinary approach. For example, water resource management covers disciplines on hydrology, soil sciences, agricultural sciences, ecology, and policy sciences. In addition, knowledge producers are supplemented with non-traditional knowledge producers, such as consultancy firms, and knowledge users. Examples of these knowledge users are companies, NGOs, and consumer groups. Therefore, in problem- or mission-oriented science and innovation, knowledge is co-created by a heterogeneous set of organizations and disciplines. One important element of knowledge co-creation is the need for multidimensional framing and solving of problems, for which we need the bridging of hard science with the social sciences from the very beginning.

For the agendas and the final reports of the two workshops, please visit the project website at www.uclan.ac.uk/gest

Project Management Update

Mid-term Reporting

GEST reached its mid-point on 31 July 2012, after 18 months work. Together we have completed Workpackage 1 on *Ethics State-of-the-Art*, with a Milestone Workshop and two Deliverable reports, and have made substantial progress towards the completion of Workpackage 2, *Ethics in Science & Technology Best Practices* (completing January 2013), with two further Milestone Workshops. Research on our 3 Case Study Workpackages (3, 4, and 5), and Workpackage 6 on Global Governance is also underway.

Workpackage 7 is our Management Workpackage, with a website and brochure delivered on time. The last 6 weeks have seen the successful completion of our mid-term contractual reporting responsibilities. As a co-ordination team we have worked hard to collate all the information required from our partners and produce the required reports for the European Commission. These were delivered to deadline on 28 September. We would like to thank everyone for their patience and co-operation during this period, and we look forward to receiving feedback from the EC regarding the next stage of our grant.

ESOF Dublin July 2012

Earlier this year, GEST was invited by our funder, the European Commission DG for Research & Innovation, Ethics and Gender Unit, to present GEST as an example of a Science in Society project at its stand at ESOF 2012 in Dublin 12-15 July.

The aim was to give a general overview of GEST, as an example of the kind of projects funded through the programme, and to be available for discussion with others who might be interested in applying.

The presentation itself clashed with a number of other interesting sessions on Ethics-related issues, but 12 people attended Julie's presentation. This was an excellent opportunity to showcase GEST at a high-profile event. Our participation meant that GEST's brochures were on display on the European Commission's prominent stand, and that GEST was included in the EC's promotional literature for their workshop programme at ESOF, which was widely distributed to the delegates.

Publications from GEST

Colleagues at RIS, Dr Sachin Chaturvedi and Dr K Ravi Shrinivas have published an article **"Science and Technology Indicators: new issues and challenges"** as part of the work on GEST. The article appears in the June edition of Current Science (Vol. 102, No.12) and can be accessed online at this link: http://www.currentscience.ac.in/Volumes/102/12/1640.pdf

Sally Dalton-Brown of Uclan has also published **Global Ethics and Nanotechnology: A Comparison of the Nanoethics Environments of the EU and China** in **NanoEthics: Volume 6, Issue 2 (2012), Page 137-150** . The article is online at : http://www.springerlink.com/content/7j87h52k75601n63/?MUD=MP

We were also pleased to see GEST highlighted by Jan Staman in the year report of the Rathenau Instituut (p11). See: http://www.rathenau.nl/uploads/tx_tferathenau/Rathenau_Annual_Report_2011.pdf

GEST Panel at Sixth Asian Biotechnology and Development Conference

A GEST Panel was held at the Sixth Asian Biotechnology and Development Conference at Hyderabad on 6-7 October, 2012. The external advisors to the GEST Project in India, Prof. Pranav Desai, Jawaharlal Nehru University, New Delhi and Dr. Vasantha Muthuswamy, former Deputy Director General, Indian Council of Medical Research (ICMR) participated in the Panel/Conference.

The Conference was organized by RIS with support from the Department of Biotechnology and the Department of Science and Technology, Government of India. The focus was on inclusion, access and development in the context of biotechnology. Dr. Sachin Chaturvedi gave details of the GEST project, key objectives and about the various case studies being undertaken in GEST. It was chaired by Prof. E. Hari Babu, Pro-Vice Chancellor, Dean, Social Sciences, University of Hyderabad, Hyderabad. The speakers were Prof. Govindan Parayil, Director UNU-IAS and Vice Rector, United Nations University, Japan; Dr. Vasantha Muthuswamy, Former Deputy Director General, Indian Council of Medical Research (ICMR), New Delhi and Dr. Reynaldo V. Ebora, Director, National Institute for Molecular Biology and Biotechnology, Philippines. Dr. K. Ravi Srinvias extended the vote of thanks.

The Conference received good coverage in the media. Details about the Conference including agenda, presentations etc. are placed on the RIS website (www.ris.org.in). Mr. Braulio Ferreira de Souza Dias, Executive Secretary, Convention of Biodiversity Secretariat (CBD), Canada delivered the Key Note address while Dr. William Dar, Director General, ICRISAT delivered the valedictory address.

Global Ethics

UNESCO to set up UN science advisory board

In Rio in June, the UN announced it is to set up an international scientific advisory board to provide the Secretary-General with guidance on science-related issues, and enable him to provide advice to UN member states on such issues. The board will bring together eminent specialists from the natural sciences, the social and human sciences, and engineering, and representing diverse backgrounds and regions. One of its key functions will be to promote cooperation on science-related issue between UN agencies, and with the international scientific community.

http://www.scidev.net/en/science-and-innovation-policy/science-at-rio-20/news/unesco-to-set-up-un-science-advisory-board.html

UN to survey gender sensitivity of science policies

The Commission on Science and Technology (CSTD), in collaboration with the UN Conference on Trade and Development (UNCTAD), plans to publish a series of case studies highlighting best practice in gender equality policies in science, technology and innovation (STI) of governments around the world. The goal is to promote more effective STI policies, by taking a greater account of women in development. Link to the full report [3.57MB]

ESF: 'Europe's lack of data and governance leave door open to misconduct'

According to a report in Research Europe, only five out of fifteen European countries surveyed by the European Science Foundation have a national body that deals with research misconduct. Croatia, Denmark, Norway, the UK and Poland have a national institution that governs research integrity, while Finland, Hungary, the Netherlands and Sweden have institution-specific offices with national oversight. But many big research players such as Germany, France and Spain leave institutions to fend for themselves when dealing with research misconduct cases.

The data are part of a research project on how European countries deal with research misconduct, which is being undertaken by the ESF, a Strasbourg-based organisation that supports strategic planning among Europe's science institutions. Having published the European Code of Conduct for Research Integrity in March 2011, the ESF is now gathering information on countries' implementation. The Code separates misconduct into five categories: falsification; fabrication; plagiarism; ethical problems; and minor misdemeanours, eg bad data storage. The ESF says that most research misconduct incidents in Europe are in the minor falsification group.

Responsible science is vital for development

S&T advances should safeguard health, equity and the rights of vulnerable populations, says rural development professional *Bhavani R. V.* writing in SciDevNet.

"Science and technology (S&T) is crucial to economic and social progress. But unless the technology 'push' is matched by an ethical 'pull', bringing the benefits of such progress to all sections of the population across nations, sex and class, the products of our brains will be a curse rather than a blessing, to paraphrase Einstein." He urges a human rights-based approach to scientific responsibility and also the need to take into account the rights of indigenous peoples, low resourced farmers and biodiversity.

He writes "The Universal Declaration of Human Rights, adopted by the UN in 1948, has been followed by several declarations and commitments that call for use of S&T for the benefit of humankind. A human rights approach to scientific responsibility is embedded in these commitments. Adhering to them means strengthening public research and prioritisation, and upholding the rights of citizens over the interests of corporations and power lobbies in developed countries. It entails responsibility by nations, organisations and individuals.

Unless there is serious commitment in S&T to make human rights and ethics paramount, the inequities will only continue to grow and development targets will remain an illusory goal."

Bhavani R. V. is a director at the M. S. Swaminathan Research Foundation, India, coordinating a project on Leveraging Agriculture for Nutrition in South Asia (LANSA). Bhavani can be contacted at bhavjoy@gmail.com.

This article is part of a Spotlight on Linking human rights, science and development on SciDevNet

20 years of China's public voice

An interesting article (although mainly concerned with environmental matters) regarding the rise of the Civil Society Organization and the voice of the citizen in governance issues in China is available at http://www.chinadialogue.net/article/show/single/en/4994#

SYNBIO

UK Synthetic Biology Roadmap and reaction

A Synthetic Biology Roadmap for the UK has been produced by a co-ordinating group commissioned by the Department for Business and Skills and it has been published on their behalf by the Technology Strategy Board. The Coordinating Group comprised individuals from industry, academia, government, the research councils and TSB and its key recommendations include: investing in a network of multidisciplinary centres; building a skilled and well-funded UK-wide synthetic biology community; to accelerate technology responsibly to market; the UK to assume a leading international role; and the establishment of a leadership council. The report can be found here (crucial aspects for GEST on p19): http://www.innovateuk.org/_assets/tsb_syntheticbiologyroadmap.pdf

Lionel Clarke, strategic programme manager for innovation at Shell, has been picked to chair the above mentioned "leadership council" for synthetic biology intended to "act as a focal point for the development of synthetic biology in the UK". The council, which will be convened by the Department for Business, Innovation and Skills, has set a first meeting for December, although its full membership is yet to be announced.

Clarke will be joined on the leadership council by Richard Kitney, co-director of the Centre for Synthetic Biology and Innovation at Imperial College London. Kitney has confirmed that he accepted a position on the council in August. At least one other person was asked to join last week. Others who worked on the roadmap, but have not so far been invited to join, are concerned about the lack of transparency. "They [BIS] need to start to say something," said Claire Marris, a social scientist at Kings College London, who sat on the roadmap group. "It's interesting in itself that we don't know anything yet: they've got a first meeting in December."

A BIS spokeswoman said: "The synthetic biology roadmap is an independent report for government and we will be publishing our response and setting out next steps in the near future."

It is not clear to what extent social scientists will be invited to advise on the ethical, social and regulatory implications of synthetic biology on the leadership council.

Dek Woolfson, professor in protein design at the University of Bristol and member of the group behind the roadmap, said the roadmap group had several "disagreements". He added, "I think there were concerns from the social scientists about wording, but pretty much everyone was on board that [ethical consideration] is important."

Others want to see an even broader set of expertise on the leadership council than was on the roadmap group. Natalio Krasnogor, a professor of applied interdisciplinary computing at the University of Nottingham, argues that the leadership council also needs computational expertise.

"If the advice is only asked from the people on the roadmap then the UK might fall down," he said, pointing to the United States' greater focus on computational infrastructure in synthetic biology. "It's currently bottlenecked here and it's only going to get worse as the amount of data is growing at unprecedented speed."

Writing in Research Fortnight, Ehsan Masood gives an interesting view for GEST:

"[the roadmap includes a] recommendation for barriers to commercialisation to be reduced. This, a familiar call from industry and its lobbies, needs to be treated with customary caution. The potential risks from synthetic biology products, which the roadmap acknowledges, are serious, and scientists at Imperial have been working to understand these with a team of bioethicists at King's. More such interdisciplinary activity should be encouraged, but is no substitute for hard-nosed and independent regulation. That is the job of agencies and scientific advisory committees attached to the Department of Health and the Department for Environment, Food and Rural Affairs.

These agencies tend to take a tougher line than the Department for Business, Innovation and Skills, in part because

their work is more closely aligned to international biosafety agreements. For example regulations on the handling and transport of living modified organisms are governed by an international agreement called the Cartagena Protocol, attached to the UN Convention on Biological Diversity. The protocol's requirements are not especially onerous, though that may change. Developing countries, led by the African Union have agreed an extra protocol identifying who is liable in cases of accidents where humans or other species are harmed. This has been signed by 51 countries and awaits ratification.

As the roadmap points out, applications for the commercialisation of products that release GM organisms into the environment are handled by the European Union, where regulators have blocked just about every application for a food-related GM product for humans. The lesson for researchers preparing to pitch synthetic biology ideas should be to confine their ideas to healthcare and not to think about food.

Synthetic biology is an exciting and potentially transformative field. The government's roadmap recommends the creation of a leadership council comprising industrialists, researchers, funders and others; and a separate strategy group across Whitehall. These are all sensible recommendations, which should help to build industries and create jobs. But scarce public funding needs to be spent wisely and synthetic biology must be regulated in an uncompromising way. The financial crisis and ongoing banking scandals are a lesson for us all of the dangers of doing things the 'light-touch' way."

UK researchers have put together a three-country network of science and engineering academies with an interest in synthetic biology (with the US and China). The UK will also host the next international conference in synthetic biology—SB 6.0—in 2013.

Synthetic Biology ERA-Net Launched

A group of 16 research funding agencies from 14 European countries has launched a European Research Area Network for synthetic biology. Funded with €2 million from the European Commission, the network aims to boost the growth of synthetic biology by providing joint research funding. It will also run activities such as training, community building, strategy development and the analysis of infrastructure needs.

FOOD

China to set food safety standards by 2015

China will accelerate its pace in setting up national standards of food safety in order to safeguard the public, a senior supervision official with China's *Ministry of Health.* At a press conference, Su Zhi said that China had now formulated more than 2,000 national, 2,900 industry and 1,200 local standards that are *related to food and additives.* "However, problems still exist in the present standards of food safety due to the restricted development of food industry and ability *of risk assessment,"* Su said. The standards will be set up by the end of 2015. According to the plan of setting up national standards of food safety, China will further improve the management mechanism of food safety and establish a normative and transparent working model. (further details in source: China Daily)

UK Parliamentary guide to GM Food

The Parliamentary Office of Science and Technology has recently published a briefing paper on GM in Agricultural Development. Almost 2 billion people suffer from chronic hunger and malnutrition in developing countries. The UK funds research into genetic modification (GM) as one option for agricultural development. This POSTnote examines the potential benefits and challenges of using genetically modified crops to improve food security in developing countries.

GM in Agricultural Development (PDF, 4 pages, 295.5 KB)

Commission adviser dismisses fears of GM crops

Anne Glover, the European Commission's chief scientific adviser, has challenged countries blocking the introduction of genetically modified crops in the EU to produce the evidence to support their concerns. In an interview with the EurActiv news service, Glover said that GM food carries no additional risks to human health, and that it was wrong for some member states to continue bans based

Researchers challenge GM soybean Decision

The European Network of Scientists for Social and Environmental Responsibility has lodged a complaint with the European Commission about its decision to authorise use of a genetically engineered soybean. The bean, grown in Brazil under the brand name Intacta, can be legally imported to the EU for use in food and feed following authorisation from the European Food Safety Authority in June. But the scientists say Efsa failed to meet the legal requirements for risk assessment of the crop. (Research Fortnight 5/9/12)

European Commission to investigate controversial GM study

The European Food Safety Authority is to investigate a study (published on 19 Sept in Food and Chemical Toxicology) claiming that a genetically modified maize used in Europe causes cancer and early death in rats, following a request from the European Commission. The study has already been publicly criticised by scientists on the basis that the authors of the research overstated their conclusions, which are drawn from experiments on ten animals, and did not provide enough statistical data or experimental information in their report.

Despite this, the findings could have significant political impact, with French Prime Minister Jean-Marc Ayrault stating that, if the results are confirmed by investigations by French national agencies, the government will press for a Europe-wide ban on the maize. (Research Fortnight : Laura Greenhalgh 26/9/12)

Like it or not, Indians are eating GM food already

India does not allow genetically modified food crops, but oil from pressed GM cottonseed is finding its way into diets. An interesting piece by Joydeep Gupta about gaps in legislation and the GM debate in India. http://www.chinadialogue.net/article/show/single/en/5191-Like-it-or-not-Indians-are-eating-GM-food-already

GM rice test researcher suspended from work

A Chinese researcher involved in the controversial testing of genetically modified (GM) rice has been suspended from his work and put under investigation, The Chinese Center for Disease Control and Prevention (China CDC) under orders from the Ministry of Health, is investigating whether dozens of children in central China's Hunan province were used in 2008 as test subjects in a US-China joint research project that included GM food Golden Rice. Greenpeace broke the news on the controversial test in late August, saying that the joint research involved feeding Golden Rice, which is genetically modified to be rich in beta carotene, to 24 children aged between six and eight years old in Hunan. It cited a paper published in the August edition of The American Journal of Clinical Nutrition. The paper claimed that Golden Rice is effective in providing vitamin A to kids. China CDC reported the latest progress of the investigation, saying its fellow researcher Yin Shi'an, the third author of the paper, was inconsistent in his accounts during the investigation. As a result, China CDC has suspended his work and put him under further investigation. Also according to China CDC, none of its affiliate institutes had ever approved or participated in the research of Golden Rice. The paper has not been submitted to the Ministry of Health for ethic examination or approval. Its lead author, Tang Guangwen, director of the Carotenoid and Health Laboratory of Tufts University in the United States, insisted that the study had been conducted with all regulatory approval required by each country. (further details : China Daily)

NANO

UK Nanosafety Partnership Group publishes guidance to support safe working with nanomaterials

The UK Nanosafety Partnership Group (UKNSPG) has developed and published guidance to support safe and responsible working practices with nanomaterials in research and development laboratories. The document (pdf) aims to provide guidance on factors relating to establishing a safe workplace and good safety practice when working with particulate nanomaterials. It is applicable to a wide range of nanomaterials, including particles, fibres, powders, tubes and wires as well as aggregates and agglomerates, and recognises previous and current uncertainty in developing effective risk management when dealing with nanomaterials and advocates a precautionary strategy to minimise potential exposure. It is intended that the document will be reviewed and updated on a periodic basis to keep abreast of the evolving nature of the content. (*Nanowerk News*)

EC to adopt case-by-case assessment of nanomaterials as 2nd regulatory review is announced—Reaction

European Commission statement
Green party statement

The Green party and consumer groups have criticised the European Commission for failing to adopt stricter regulations on nanomaterials, calling for more control of their safety.

The comments were made in response to the Commission's second regulatory review on nanomaterials, which concludes that evaluation of the materials' safety should be treated on a case-by-case basis. The review also finds that Reach (Registration, evaluation, authorisation, and restriction of chemicals), the EU's existing chemical regulation legislation, is good enough to be applied to nanomaterials.

These results have attracted criticism from political and consumer groups that feel more legislation is needed. Another concern is that there is not enough information available on the safety of these materials.

Green environment and public health spokesperson Carl Schlyter said: "It is highly misleading to suggest that the generic rules of Reach, designed for normal substances, are appropriate for nanomaterials, and contradictory to the calls for a case-by-case approach for the risk assessment of nanomaterials."

However, chemicals lobby group Cefic said it "welcomed" the Commission's decision.

The first regulatory review on nanomaterials was adopted in 2009. (Research News: Catie Lichten 5/10/12)

Nano –safety studies urged in China

An article in Nature (vol 489, p 350, 20th September 2012) reports that leading Chinese researchers are urging China to carry out more extensive safety studies and improve regulatory oversight of synthetic nanometerials.

At the 6th International Conference on Nanotoxicology in Beijing this month researchers expressed a belief that this was the only way to maintain the competitiveness of China's nanotechnology centre. Zhao Yuliang, deputy director of the Chinese Academy of Sciences' National Center for Nano-science and Technology (NCNST) in Beijing said. "We certainly don't want safety issues to become a trade barrier for nano-based products." (doi:10.1038/489350a)

GEST newsletter

produced by

Cathy Lennon

clennon1@uclan.ac.uk