

Public Communication of  
Science & Technology  
International Symposium  
2013

August 27-28 | Jakarta, Indonesia  
Auditorium BPPT

Science & Technology Communication  
Through Cyber Space:  
Developing Science & Technology  
Culture to Create Green Quality of Life



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## GREETINGS

FROM THE EXECUTIVE SECRETARY  
OF THE AGENCY FOR ASSESSMENT & APPLICATION  
OF TECHNOLOGY (BPPT)

THE 2013 INTERNATIONAL SYMPOSIUM  
PUBLIC COMMUNICATION OF SCIENCE & TECHNOLOGY  
“S&T COMMUNICATION THROUGH CYBER SPACE :  
DEVELOPING S&T CULTURE TO CREATE GREEN  
QUALITY OF LIFE”



Dear Colleagues,

Allow me to invite you to convey our praises to the Almighty God, so we could be in good performance and prosperity. It is my greatest pleasure to have this opportunity to welcome you from all around the world and Indonesia to this 2013 International Symposium on Public Communication of Science and Technology (PCST). We are pleased that the Symposium can be conducted in the auditorium of the Agency for Assessment and Application of Technology (BPPT), Jakarta - Indonesia, on 27th - 28th August 2013.

I would like to express my gratitude to our distinguished speakers and participants for their attempt to come to Jakarta, to engage and share their knowledge and various experience with all of us. I would also express my appreciation to the Organizing Committee that has been put their effort to organize the Symposium. With this kind of event, we do hope that we could promote science and technology (S&T) better, so that it would deliver advantages to society.

This year the Symposium is very special, because it is in line with the Commemorate of National Technology Awakening Day (10th August) and the 35th Anniversary of BPPT (21st August). The theme for this International Symposium is “Science and Technology Communication through Cyber Space”, which is the 3rd series of activities since 2011. The sub theme for 2013 is “Developing S&T Culture to Create Green Quality of Life”.

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## THE SPEAKERS

HEE-YOL YU

Dr. Hee-Yol Yu has graduated his PhD from the Korea University in the field of Politics and Science & Technology Policy Making (Between the Developmental State and Pluralist Tinkering : Institution, Politics, and Science and Technology Policy Making in South Korea). Since then, he has got various careers at the Ministry of Science & Technology of Republic of Korea, from the Director for Information Industry, DG for Technology Policy Office, DG for National Science Museum, to the Vice Minister.



Dr. Hee-Yol Yu had a range of positions for Chairman of various organizations such as Chairman for Korea Research Council of Fundamental S&T. Due to his concern in S&T development, at the moment he is also a Chair Professor at the Pusan national University, as well as the Chairman for Korea Edge Technology & Management Development Center (KEMDEC) and the Chairman for Board of Korea Carbon Capture & Sequestration R&D Center (KCRC).

Since December 2012, Dr. Yu has another significant task when appointed as the Director for ASEAN + 3 Center for Gifted in Science.

PICHAJ SONCHAENG



Dr. Pichai Sonchaeng is the President of National Science Museum of Thailand.

He is also the Vice President for the Asia Pacific Network of Science & Technology Center (ASPAC). His work has been dedicating for science communication for years in Thailand, gaining various networks, global experiences and creativity.

## THE SPEAKERS

### BETTY ALISJAHBANA

Betti graduated from the Bandung Institute of Technology, majoring in Architecture, and has attended various leadership training and workshop in USA, Japan and Australia during her tenure in IBM.



Betti started her career at IBM in 1984 as a management trainee and since then has held several key positions in Indonesia and in ASEAN Region, which eventually lead her to become the Country General Manager for IBM Indonesia from the year 2000 to 2008. She was the first woman in Indonesia and the Asia Pacific region to hold the position as the company's Country General Manager

Her experience in Business and Technology has brought her to various advisory role to the Government as well as to Private Sectors. Among others Betti is a Member of The National Innovation Committee, a think-tank group formed by the President of Indonesia to provide policy advice to the Government. Betti is also the Vice Chairman of the National Research Council, Member of Advisory Board, Bandung Institute of Technology (ITB), and Commissioner of PT Sigma Cipta Caraka, one of Indonesia's most prominent IT Services Company. Since February 2012, Betti was appointed as Independent Commissioner of PT Garuda Indonesia Tbk.



### NINOK LEKSONO

Dr. Ninok Leksono is the President of Mulimedia Nusantara University and has been known as a senior science journalist in Indonesia from Kompas Gramedia Group.

He received awards from UNESCO Press Council, Indonesian Engineer Assosiation (PII), and Indonesian Science Institute (LIPI) for his excellent works as a science journalist. He graduated from the Bandung Institute of Technology, majoring in Astronomy, continued to have a Master degree from Department of War Studies from the King's College in London, and held a Doctor degree in Politics from University of Indonesia. Ninok is also a member of the National Research Council.

Science and technology (S&T) communication can be referred of scientific information and message from its source to target recipients through various instruments and media. The communication is commonly divided into two categories, as technical or research oriented S&T communication and as popular S&T communication or popularization. The first is generally understood in the form of innovations or developments in the research papers or technical specifications prepared by experts. The second is S&T communication in common language, where scientific information needs to be spread and promoted within the society. This sometimes is hindered by the public can keep up with, comprehend and accept. Awareness, hence, is increasing within S&T community on the responsibility of scientists and engineers to make their work more accessible and informative to general public.

Variety of instruments and media are developed as well as strategies to create strong and open relationship between S&T and society, to lead a better practice in diverse fields. They would also assist business to become more aware of new opportunities developed by researchers, thus leading to effective management, professionalism and new industries.

In line with the effort to bridge the gap between S&T and society, this Symposium shall improve opportunities to strengthen network and relationship, between those who concern to make S&T part of everyday life and to make S&T more accessible and exciting to youngsters and non-scientists. I believe this Symposium would influence way of thinking of participants to compose a new paradigm of S&T development in the future.

Enjoy the symposium, I wish you all success.

Best regards,

Dr. Ir. Jumain Appe, MSi.  
Executive Secretary for BPPT /

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## GREETINGS

FROM THE DIRECTOR GENERAL  
FOR ICT APPLICATIONS  
OF THE MINISTRY OF COMMUNICATION  
& INFORMATION TECHNOLOGY

THE 2013 INTERNATIONAL SYMPOSIUM  
PUBLIC COMMUNICATION OF SCIENCE & TECHNOLOGY  
“S&T COMMUNICATION THROUGH CYBER SPACE:  
DEVELOPING S&T CULTURE TO CREATE GREEN  
QUALITY OF LIFE”



Dear Participants,  
Welcome to the Public Communication of Science & Technology (PCST) International Symposium 2013, at Jakarta.

It is my pleasure to learn that many of us realize that science and technology (S&T) are important in every aspect of human life, as one of the factors to support the development of economic growth of a nation. They are the instrument and mechanism for continuing progress in standard expectation of living. In this sense, spreading knowledge and public awareness of S&T has become a high priority, in order to introduce policies, innovation, new technologies, etc. S&T communication then has its place in the area of research and development, as a mediator and stand among scientists / engineers as well as to public in providing appropriate information through various channels.

When the internet linked to the worldwide commercially since 1990s, its platforms and applications were all developed and applied first in research communities as a principal means of professional scientific communication. It is now difficult for people to consider how they could work without the internet, since its popularization affects not only for researchers but also to every aspect of societal behavior. The internet has become the central hub for communication. This is one of the example that we should learn about the efforts developed to communicate S&T, not only among researchers but also among researchers and public.

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## THE SPEAKERS

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### TOSS GASCOIGNE

Mr Toss Gascoigne was elected the inaugural President of the Scientific Committee of the Network for the Public Communication of Science and Technology, at the ninth international PCST Conference in Seoul in 2006.

The PCST Network organises biennial conferences, a web site and a discussion list. This allows people interested in science communication to meet, and to plan and organise events, conferences and books.



Based in Australia, he works at the interface between politics, science and the media. He served as Executive Director for three national organisations over the last 15 years: the Federation of Australian Scientific and Technological Societies (FASTS); the Council for the Humanities, Arts and Social Sciences (CHASS); and Australian Science Innovations (ASI).

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### PEDRO SANCHEZ



Dr. Pedro Sánchez Escobedo is a full time Professor Researcher Titular “C” at the University of Yucatán, Mexico. He is also the member of International Committee for the World Creativity Festival.

Dr. Sánchez obtained the title of Medical Surgeon and specialization in teaching in the school Autónoma de Yucatán, Master in Psychology Education at the University Bristol, England and Doctor in Psychology and Psychiatry at the University of Iowa, USA. He is a founding member of the Mexican

Council for Educational Research.

To date, he has published 5 books, over 100 original research articles and has been invited as professor at several public and private universities in Mexico. Currently, he is a counselor master of the Faculty of Education, member of the permanent commission academic of UADY and the coordinator of national technical committee for System of Assignment and Transfer of Credits of Mexico (SATCA). His areas of academic interest are the development of talents through research and intervention projects with outstanding children.

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## THE SPEAKERS

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### ASHWIN SASONGKO

Dr. Ashwin Sasongko Sastrosubroto is the DG for ICT Application of the Ministry of Communication & IT of Indonesia. His PhD has completed from the Aston University – UK after finishing his Bachelor degree from the Bandung Technology Institute (ITB).



He has various assignments previously as the Vice Chairman of the Agency for Assessment & Application of Technology (BPPT), the Executive Secretary of the Minister for Research & Technology, and the General Secretary for the Ministry of Communication & IT.

With those strategic positions, he has commitment to the development of national ICT and ICT-based creative industry. Internet volunteer is one of the success programs developed between the Ministry of Communication & IT and public under his supervision. His remarkable work of “Safe Internet Program” can also be accredited in supporting the public application of internet in proper and safe way towards the national broadband economy.



### SATRYO SOEMANTRI

Prof. Dr. Satryo Soemantri Brodjonegoro has dedicated his work for his main research work in tribology, fracture mechanics, finite element analysis, mechanical design; after finishing his PhD in mechanical engineering, University of California at Berkeley, USA, in 1985. He is now the Vice Chairman for the Indonesian Academy of Sciences, where his lifetime membership since 2008.

Among other things of his nationwide experiences, he was the DG of Higher Education of the Ministry of National Education of Indonesia in 1999-2007. He always has concern in the development and policy of higher education, that can be seen for assignments for the academic consultant to the World Bank, the Asian Development Bank, and the Japan International Cooperation Agency; as well as academic advisor to the Bina Nusantara University and S&T consultant to the ASEAN secretariat.

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The advent of ICT nowadays provides wide range of possibilities and play as a key role on disseminating information. ICT has become convenient tool for adopting various requirements. Creative approaches using ICT applications are developed to attract segmented public in particular areas. Internet has also attraction and superiority, since the access is available all the time as well as space efficiency. The popularization of social media services are other recent addition to the means of communication with infinite resources from the internet. It is, therefore, the Indonesian Government supports applying ICT in developing programs for communicating policies, knowledge, and new developments.

S&T communication becomes important to support the urgent issues. We need to create efforts and take new initiatives in developing S&T communication, in order to build a hub of change agent for the cutting edge of S&T. We hope the media for S&T communication is not only attractive but is urgently needed for global issue.

Lastly, congratulations to the Organizing Committee to realize the Symposium as a collaboration effort among the Ministry of Communication and Information Technology (MCIT), the Agency for Assessment and Application of Technology (BPPT), and the Public Communication of Science and Technology Network (PCST). I believe this Symposium would result significant network and engagement, not only for the benefit of participants, but also for the importance of world-wide scientific contribution.

Thank you for your contribution.

Best regards,



Dr. Ashwin Sasongko S., MSc.  
Director General for ICT Applications of  
the Ministry of Communication & Information Technology /  
Symposium Steering Committee

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PCST JAKARTA INTERNATIONAL SYMPOSIUM 2013  
PARALLEL SESSION  
Tuesday, 27 August 2013  
15.30 – 17.00

Room: *Komisi Utama, 3rd fl. BPPT Building II*

Chair: *Ms. Mariam Barata*

Effective S&T Communication Strategy In Multicultural Society

1. Hui Jun Zhang (CHN), Evaluative Thinking in the Building of Learning Society
2. César Carrillo Trueba (MEX), Combining knowledges in search of alternatives for sustainable development: the role of science communication
3. LI Hong-lin (CHN), On a multi-science culture in the construction of scientific literacy in developing countries
4. Hanan Mohamed Abdel Karim Abbas (SUD), Bridging the Gap – The Case of Sudan
5. Ramlee Mustapha, et.al. (MAL), Awareness of Green Technology Among University Students in Malaysia
6. He Li (CHN), Research on training mechanism of Science popularization professionals in mainland China
7. Archita Bhatta (IND), Climate Change communication: flood of stories but drought of impact
8. Li Junping (CHN), To Make a Study of Science Popularization Modes Conducted by Chinese Academy of Sciences

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## THE SPEAKERS

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### MASATAKA WATANABE

Masataka Watanabe is the science communicator and professor in Public Relation Office, University of Tsukuba. He is also the adjunct professor in Nara Institute of Science and Technology, and Nihon University and the adjunct research fellow in National Institute of Science and Technology Policy and Japan Science and Technology Agency. Watanabe is also a scientific council member of PCST, and a commissioner of Science Media Center of Japan and Japanese Association for Science Communication.



With MD from the University of Tokyo (and the PhD course certificate), he is a famous science writer and has researched history of science and evolutionary biology for over 30 years. He is an author of five books and a co-author of four books about science communication, history of science and evolutionary biology. He also translated over 50 English popular science books into Japanese including almost all books written by Stephen Jay Gould.

He won the Nikkan Kogyo Shimbun Science & Technology Book Prize in 1991 and the Award for Public Understanding of Evolution from the Society of Evolutionary Study, Japan in 2004. In 2002 he joined National Institute of Science and Technology Policy where he was the Director of 2nd Policy-Oriented Research Group and promoted researches and activities for science communication. From April 2008, he moved to Japan Science and Technology Agency where he was organizing Science Agora which is the biggest conference of science communication in Japan. He has moved to the University of Tsukuba since January 2012.

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### LIN LIQIN



Dr. Lin Liqin the Division Director of Children & Youth Science Center of China Association for Science and Technology.

She is Mainly working on organizing national science contest and other popular Science activities for young students.

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To Make a Study of Science Popularization Modes Conducted by Chinese Academy of Sciences

Wang Zhifang Li Junping

(China Research Institute for Science Popularization, Beijing 100081, China)

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**Abstract:** The thesis tries to make a systematic review of science popularization (hereafter referred to SP) work conducted by Chinese Academy of Sciences during the recent years, and simultaneously makes an in-depth analysis of its operating system, its contents, its operating modes, its media operation, as well as its featured activities. The thesis, based on the aforementioned review and analysis, tries to delve into the issue concerning how science popularization is conducted, and the problems needed to be resolved currently, and finally puts forward some good advice in terms of how to give full play to a better performance of SP work. Chinese Academy of Sciences actively endeavors to promote scientific knowledge, scientific achievements, and scientific approach, as well as greatly advocates scientific ideology and scientific spirit. For the promotion of science popularization, Chinese Academy of Sciences organize scientists and people whose work having something to do with science and technology to promote SP in various forms. Although Chinese Academy of Sciences has made certain achievements in SP work, its overall plan and design needs to be further strengthened. In order to have these problems worked out, the thesis suggests that an incentive and evaluation mechanism on SP work should be set up and a guide manual should also be designed for researchers who are engaged into SP. **Keywords:** Chinese Academy of Sciences, Science popularization, Make a Study of, Science Popularization Modes, An Incentive and Evaluation Mechanism, Professional SP Talent, SP Resources, Scientific Knowledge, Scientific Approach, Scientific Spirit

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Room: Komisi I, 3rd fl. BPPT Building II

Chair: Dr. Pedro S. Escobedo

Blending of Art, Science and Technology

1. Junping Hu (CHN), Science Popularization Activities towards the Public at Chinese University
2. Punit Kumar (IND), Perspective Study of 'Social Forestry' in India
3. Monika Raharti (INA), Science Education Through Scientific Activities
4. Guo Xiaoyan (CHN), How the Science & Technology Culture to Create Green Quality of Life?
5. Hendra Suryanto (INA), Science and Technology Communication in PPIPTEK Context
6. Bonaria Siahaan (INA), Demonstration as an effective means of Communication
7. Nimi Soraya Hillmee (MAL), Impactful Science Communication Through Science Shows

Room: Komisi II, 3rd fl. BPPT Building II

Chair: Ms. Jenni Metcalfe

Outside the Box of Media for Science & Technology Communication

1. Duncan Dallas (UK), Café Communication Outside the Box
2. Himansu Sekhar Fatesingh (IND), Role of Newspaper in Communicating on Climate Change
3. Wang Dapeng (CHN), Science Media Center and the Foster of Social Capital
4. Ihsan Surur (PPIPTEK), Mobile Interactive Influenza Pandemic Preparedness Exhibitions and Programs
5. Yinlin (CHN), Popular Science Publishing under the Reading Crisis
6. Jalin Merapi (INA), Community based Information Network for Disaster Risk Reduction
7. Michelle Kovacevic (CIFOR), Maximizing stakeholder engagement to facilitate forestry research uptake in Indonesia

*Notes for Presenters:*

- Please upload your presentation file at the computer used in the respected room before lunch time

- Presentation time: max. 8 minutes

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AWARENESS OF GREEN TECHNOLOGY AMONG  
UNIVERSITY STUDENTS IN MALAYSIA

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ABSTRACT

Green technology is an emerging concept with the ultimate goal is to achieve sustainable development by reducing environmental risks and ecological scarcities, carbon emissions and pollution as well as enhancing energy and resource efficiency and preventing loss of biodiversity. Basically, green technology is the “clean” technology that is environmentally friendly and is created and used in a way that conserves natural resources and the environment. The purpose of this case study was to identify the awareness of pre-service technical teachers regarding green technology in one of the public universities in Malaysia. Technology Acceptance Model (TAM) was used as the underpinning theoretical framework. Single site and multiple cases – case study method was employed. A sample of 40 final-year university students from the Faculty of Technical Education was selected. The study found that even though the majority of the respondents claim that their awareness of green technology is relatively high, the daily application of green technology in their lives is only moderate. Interestingly, in the open-ended section, respondents were asked to state an example of a green technology, one-fourths (25%) of the respondents admitted that they do not know. Further, almost half of the respondents state that Malaysian citizens have rather low awareness of green technology.

Keywords: Green technology, university students, technical majors, Technology Acceptance Model (TAM), Malaysia

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Science Popularization Activities towards the Public at Chinese University  
Junping Hu  
China Research Institute for Science Popularization, E-mail: jphu@iccas.ac.cn

University or college, known as the Ivory tower usually focus on the students' education and research. Science popularization activities such as the public lectures with a comparatively long history are considered as the social responsibility of university. Nowadays, China pays much attention to the university's science popularization activities and advocates teachers and students at university carrying out science popularization activities towards the public. The formation and content of activity is abundant. “Science Shop” and “Science Camp” are two of the typical activities. By these activities, the resources of university are utilized well and the public benefit much from the engagement. However, the work mechanism of science popularization at university need to be developed which would promote the activities. Keywords: University, Science popularization, the Public, Work mechanism



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Abstract: Science Media Center (SMC) to some extent constructs a platform for science communicators and science journalists; however, social capital theory just carries research on the social network and discusses how to enhance the stocking of social capital to promote the social development. The present study indicated that the establishment and development of SMC to a certain extent not only accomplished the goal of fostering and promoting social capital of individual members, but increased the growth of organizational social capital stock. Moreover, the further development of social capital also could react upon the activities of science media center.

Key words: science media center; social capital; foster

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Climate Change communication: flood of stories but drought of impact  
Architta Bhatta, India

Climate change communication has visibly increased over the years, but this has changed pretty little on-the-ground realities. There has been a significant jump over the last decade in the number of articles on the issue appearing in the popular media—newspapers and television. Though this accelerated rate of climate communication in the media has resulted in increased awareness about the issue among the people, it has not translated to significant changes in behaviour among the public. We find evidence of the lack of change in the fact that the atmospheric carbon dioxide concentrations have crossed 400 ppm this year. Most developed countries have not demonstrated any significant reduction, or even intention to reduce greenhouse gases in the Kyoto Protocol period. The world is still debating about what the post Kyoto treaty will look like. These indications point to failures in communicating the seriousness about the effects of climate change both to policy makers and common people. Though the increase in coverage about the issue has resulted in increased level of knowledge, the perception about the risk associated has not been effectively communicated. So the increased knowledge has not been able to motivate changes in behaviour necessary to curb the problem. This paper examines some of the reasons behind this lacuna. The study shows that climate change communication has failed to connect the problem with day to day lives of people. As a result people perceive it as a remote problem that will not affect their lives or their immediate future and do not think it requires immediate action.



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## Bridging the Gap – The Case of Sudan

By Hanan Mohamed Abdel Karim Abbas

CSR & Sustainable Development Advisor – member of the Global Compact Local Network (UNGC)

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Twenty-one years of civil war have left an entire generation without access to proper education in Sudan. A country that is 1.9 million square kilometres and a population of, approximately, 36 million, of which 62% is of the age 15-24. More than 30% of this 62% are migrant youth, including returnees and demobilised soldiers.

This political and social instability led to:

- High illiteracy among the young persons.
- High school dropouts.
- Over 20% of young unemployed/unemployable persons
- Many work for long hours under informal and insecure work arrangements, characterized by low earnings and lack of social protection.
- Limited participation of the young Sudanese in social and political life.
- High level of foreign work force throughout the business hierarchy

In many localities and remote areas, mobile telephones are the only technology known. It is known to them but not necessarily they have access to it. Remoteness and isolation characterizes many Sudanese Communities specially the nomads.

The idea is to highlight the need of an enabling Science and Technology environment to encourage youth to develop an interest in science, technology and communication. Hence, promote science awareness activities to at-risk youth and youth living in rural and remote communities. This will be their chance to increasing employment and empowering them to overcome challenges posed by poverty, limited social services, difficulties in transitioning into the workforce and, most importantly, gender injustice. S&T can support youth development by influencing development plans at the National level and make S&T part of the youth everyday activities.

The consolidation of efforts and participation of Government, civil society, local communities and private sector is the key to success. Hence, the inclusion of youth S&T programs as part of the CSR and sustainable development national policy will ensure its effectiveness and sustainability.

Key words: Livelihood Opportunity for Young Persons by the use of S&T.

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## Science Education Through Scientific Activities

Monika. Raharti

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Like most Asian nations, currently Indonesia is having an education that most likely to be very exam style. This is a problem that needs to be addressed by promoting a learning based education with a 'student centered' philosophy.

One of which, is by enhancing the research climate in secondary schools, where students are challenge to spark academic curiosity in a more engaging and "natural" way from firsthand experience of doing observations, explorations, analysis, and experiments. This will then allow them to develop a systematic thought that is rooted from research methodology and scientific measures in solving research problem and thus resulting in a prospective undergrad students that is more ready to be immersed to the world of research.

In that spirit of gaining better-immersed-in-science/physicist undergrad prospectus and to achieve the goals aforementioned, Center for Young Scientists with the affiliation to Surya University is continuously striving to build a sustainable system by integrating competitions into a its education part. Aside from that, the system would also benefit the output of the education by integrating character building in it.

The system consist by efforts in increasing teachers' quality, advisory in research process in high school, organizing scientific competition in local and international level, collaboration between research centers, research institutes, and high schools, establishment of Research Teacher Community, and publishing research journal for high school students.

All of this, will need active role from the stakeholders that will decide the success of this effort. For a developed country with an established education system, this will not a pose a problem. But this same outlook won't occur in developing nations, as there still needs a more thorough comprehension to the stakeholders involved to take part and to be actively involved in this effort.

HENDRA SURYANTO

Head of Operation Division

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Indonesia Science & Technology Centre

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Indonesia has built the first science centre of PP-IPTEK since 1991. Its main mission is to build awareness of science and technology (S&T) through public education, with equal access for all. PP-IPTEK should also work as the national reference institution in order to initiate and support the development of science and technology centres across Indonesia. Hands-on exhibits together with educational programs are provided in the centre to gain public understanding of S&T. Since then, S&T communication has been innovated, developed and practiced, throughout all kind of programs and activities dedicated to various targeted group of people.

In practicing S&T communication at PP-IPTEK, principles of 5W+H are implemented in the daily operation activities, that consist of : what, why, where, who, when, how. The principles look as if simple and straightforward, but actually they are practical and could cover a variety of aspects required to deliver S&T communication to the targeted group of people. Principle of "what" covers S&T information, function, customers / visitors, enquiries, manner and behaviour, environment, and learning process. "Why" is devoted to the importance of S&T communication, capacity development and professionalism; while "where" consists of media of communication, public space, school, exhibition, etc. All kind of targeted groups and S&T communicators belong to the "who" principle, and "when" is based on S&T communication process. The principle of "how" is for the appropriateness of knowledge transfer, meaningful and effectiveness, combined with monitoring and evaluation process. It is, therefore, S&T communication is one of the important elements in achieving science center missions or objectives. All persons in charge in the center should be competent science communicators in order to create meaningful experiences for public as well as to manage the institution professionally.

Keywords : science and technology centre, principles of operation activities, 5W+H implementation.

Communicating forestry issues in Indonesia

The forests of Indonesia are among the largest in the world, rich in biodiversity and an important livelihood source for up to 30 million Indonesian people (Sunderlin et al. 2000). However, over the past few decades, the demands placed on Indonesia's forests have grown, mostly due to large-scale industrial development, changes in the governance of natural resources and the introduction of climate change mitigation schemes such as Reducing Emissions from Deforestation and forest Degradation (Indrarto et al., 2012).

These developments have posed challenges to practitioners both in informing policy making and implementing science development projects on the ground. In their analysis of Indonesia's political economy, Datta et al. concluded that scientific evidence is not often systematically considered by policy makers -- in fact they may be discouraged from seeking knowledge due to authoritative power plays, time pressures, insufficient analytical capacity and opposition of influential actors . A lack of social and economic analysis of research -- and the resultant information gap experienced by local stakeholders -- not only prevents the application of science and technology information in projects for development purposes (Scidev.net Global Review 2012) but can also lead to potentially destructive conjecture and speculation.

This session (in Bahasa Indonesia) will discuss the different platforms and approaches being developed by the Center for International Forestry Research (CIFOR) to help communicate complex technical issues to various forest stakeholders in order to facilitate forestry research uptake in Indonesia.

Proposed structure: 4 x 7-minute presentations + 30 min discussion/Q+A

- Michelle Kovacevic, Blog Editor and Social Media Coordinator, CIFOR – Changing public perceptions of Indonesia's forests: lessons learnt from social media
- Daniel Murdiyarto, Professor of Geophysics and Meteorology, Institut Pertanian Bogor (IPB) and Senior scientist with CIFOR – Improving the demand for and use of scientific knowledge in Indonesia's policymaking process.
- Stibniati Atmadja, CIFOR Scientist, Forests and Livelihoods - How much information is too much? Challenges and opportunities of communicating REDD+ to local stakeholders.
- Budhy Kristanty/representative from FORDA – Filling the void on climate mitigation information: A case study examination of the REDD-I platform

<http://www.smeru.or.id/report/workpaper/politicaconomy/politicaconomy.pdf>

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Evaluative Thinking in the Building of Learning Society  
Nian Zheng, Huijun Zhang

Abstract: Traditionally, China is a nation, in which people learn the sages' theories, lessons and knowledge that handed down from one generation to another. In modern society, who occupy the dominant position in science and technology, it will occupy a leading position in the development and win the initiative. The development of science and technology becomes an important basis to measure a country's comprehensive nation strength. Learning is more and more important for the civilization and modernization of the nation, thus Chinese government and leaders have been calling for building a learning society and an innovative country since the beginning of a new century. But how to get this goal is a more important issue and need to study further. This paper proposes that evaluation is a good way to build a learning society, and evaluative thinking could play the main role in the process of building an innovative country and a learning society.

Keywords: learning society, evaluative thinking, innovative country

Nian Zheng, China Research Institute for Science Popularization, 873646944@qq.com;  
Hui Jun Zhang, China Research Institute for Science Popularization, 286388044@qq.com

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Research on training mechanism of Science popularization professionals in mainland China

He Li

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Abstract: Science Popularization of carrying out the mission of our citizens scientific literacy development ,It is the infrastructure work of the national innovation system and building an innovation-oriented country. Science popularization professionals development is the key to the sustainable development of science popularization. Confronting the situation of the insufficient number of full-time science popularization professionals and the irrational structure of the professionals in the science popularization. It is still the main focus and aim of training for the existing and potential science popularization persons and to change the human resources of science popularization into full-time science popularization professionals.

This paper analyzes in depth the development of science popularization professionals, the training mechanism, internal mechanism and external popularization professionals training in the evaluation system .The training mechanism of science popularization professionals that focuses on the implementation of the legal science popularization professionals training, professional training institutions, training forms, and the training security institution.

Key words: science popularization professionals; training mechanism



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Perspective Study of 'Social Forestry' in India

Punit Kumar\*# and Priti Saxena

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#### Abstract

India, the land of one of the most oldest civilizations of human history, where the scientific approach to the study of environment and forestation has been mentioned in one of the oldest texts (Vedas). The agrarian economy of India was much influenced by the cultural norms (social, cultural, political and economic life of people) of the society, both in the pre and during the colonial rule. In the post colonial period (after independence in 1947) most of the environmental studies and discourses were focused on rural and forest areas. During the past two decades, a new concept of 'social forestry' has emerged, emphasizing the environmental issues in the urban areas. In this concept, major role is played by the working class (wage earners) who constitute majority of the urban population in India. The present paper aims at analyzing the contribution of India's urban population in striving the complexities and materialities of the environment. The study focuses on environmental activism and public motivation; public participation; and influence of religious and traditional thoughts. The study also examines the role of diverse traditions and beliefs within the working class with respect to their concern over the environmental issues. The analysis advocates the need to communicate the importance of environmental issues to the masses through means of extension education incorporating traditional means like folk songs, dance shows, local puppetry art, folk theatre, etc.

Keywords : Social forestry, Urban forestation, Public participation, Communication

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Role of Newspapers in Communicating on Climate  
Change

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Abstract

Climate change is the most important global environmental issue facing humanity in recent times. For developing countries like India the concern with climate change is extremely serious. The impact of climate change can be arrested and mitigated effectively on educating the people and increasing public awareness. Improved understanding of public perceptions about Global Warming can contribute to inform scientific and policy discussions of climate change. Newspapers play very significant role in educating, persuading and even in decision making of people on climate change. The scientific information on climate change provides logical thinking and makes people known about climate change and its dangerous impact on the earth. The reasoning ability thus developed can lead them towards eco-friendly lifestyle, judicious use of resources and energy, reduction of GHGs emission etc. This paper studies the coverage of climate change in news papers during the COP-18 held in last 2012 and analyzes information dissemination. The study aims to bring out role of national and regional news papers in achieving the above stated objectives. Key words: Climate Change, Science Communication, Common Man, Educating people, Logical thinking, Scientific Temper, Information Dissemination

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a)Title of abstract: How the Science & Technology Culture to Create Green Quality of Life?

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Science & Technology is an important tool for human-being understanding and transforming the world, science and technology culture which generated from science and technology activities is the important part of human culture. As a culture, science & technology has its corresponding environment and traditions which impact on people's daily lives. The purpose of this study is to analysis the internal mechanism of science & technology culture how to create a green life, and to find the effective way to the green life. This study mainly uses the qualitative research method combined comparison study method.

The study begins with the introduction of science & technology culture value, that is using science & technology to promote the people's both material and spiritual lives, focusing on the value and meaning of life. Then the research analysis the science & technology culture how to create green life from people's production modes, lifestyles, social status, and spiritual aspect etc. Finally, in order to reduce or avoid technological activities negative effects on resources, environment, society and people's spiritual life, the research suggest the science & technology sector using the culture value to guide the research & development behaviors; using the culture norms to restrict the science & technology activities; while the environmental protection department should establish a science & technology culture supporting environmental monitoring and protection system, thus a favorable science & technology culture environment will be built to create the aspiring green quality of life.

f)Keywords

Scientific & technology culture; Scientific & technology culture values; Green quality of life; Mode of production; Mode of lifestyle; Social status; Spiritual life; Environment of scientific & technology culture; Science & technology activities; Environment; Resources; Environmental monitoring and protection system.

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- It is a network, not an organisation in the traditional sense, so it is bottom-up, not top down. Each Café is independent and has its own interests, depending on the local culture and community.

So there is no narrow purpose - political, educational, scientific or whatever. The Science Cafes will help to bring science back into culture. Evenings are spent in a cultural examination of science, from which each member of the audience draws his or her own conclusions. Public discussion is an end in itself - one interesting and enjoyable aspect of cultural exchange. Public engagement will take many forms, but it is important that many of them start from society, with social innovation, rather than from outreach by traditional institutions.

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## Café Communication Outside the Box

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The context in which Science Cafes operate is changing rapidly. When the Café Scientifique started in the UK it was easy to get publicity because it was considered ridiculous to go into a Café and talk about science rather than just gossip with friends. At that time there was little discussion of science outside academia, and little reporting of science in the press.

But in the last decade science communication has mushroomed, and changed. Ten years ago it was about 'public understanding of science', now it is about 'public engagement with science'. It is now a hot topic among politicians, educators, academics, civil servants, scientists and democrats. Each group has its own interests.

- politicians want to be informed about public attitudes and fears,
- educators want to create more scientists,
- civil servants want to 'consult' the public in order to draw up more acceptable proposals,
- academic departments expand to initiate the cross discipline of science and media training,
- scientists realise their research grants are linked to public concerns,
- democratic groups want to change government policies on subjects like climate change.

Now there is nothing wrong with many of these aims. People always use a means to further their own ends, but this is not the public engaging with science, it is science trying to engage with the public. Academics, politicians and educators all say they want to 'listen' to the public, but they are only 'listening' to responses to their own questions. Everyone says that engagement is a two way thing, but the present fashion for engagement comes from science, politics and academia, rather than from the public.

Where does the Café Scientifique stand in the spectrum of public engagement? Here are some of the distinctive features of the Cafes

- They have moved discussion into the public arena. Now academics want to go public, not just the public wanting to be academic.
- There is no brief to defend science at all costs. This provides a free and open agenda, allowing people to ask awkward questions.
- There is face to face contact with scientists at a community level. But of course there is also the internet, which has enabled us to be international and is opening up many new possibilities.

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## MOBILE INTERACTIVE INFLUENZA PANDEMIC PREPAREDNESS EXHIBITIONS AND PROGRAMS

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Education and outreach are critical to be prepared for a pandemic. Understanding what a pandemic is, what needs to be done to prevent and to prepare for pandemic influenza, and what could happen during a pandemic helps us make informed decisions both as individuals and as a nation. Should a pandemic occur the public must be able to depend on its government to provide scientifically sound public health information quickly, openly and dependably. Science centers can play a by role here as; they are uniquely placed to effectively communicate science using hands-on exhibits and related educational programs.

In early 2010, PP-IPTEK opened the Avian influenza gallery for enhancing public awareness of the risks posed by Avian Influenza and the way and means of disease prevention and control. Also in 2012, PP-IPTEK opened the new gallery of Influenza Pandemic Preparedness Exhibition and Program for increasing public awareness and understanding of influenza pandemic preparedness. This included practical prevention methods and the importance of stemming the spread of infectious diseases and also establishes healthy personal and public hygiene behaviors.

The people of Indonesia are spread out over many islands. This distance and geography makes it difficult to reach much of the population. How can we provide interesting and fun learning experiences for people across the Indonesian archipelago as we do in our science center in Jakarta?

Outreach program will be a strategic move towards educating the public in locations outside Jakarta and outside Java Island about pandemic influenza. Our target audiences are elementary school and junior high school students in order to provide the information at an early age. We will trial this outreach program in 2013. Also we do monitoring and evaluation to measure how effectively we are communicating messages to the public.

Keywords: public awareness, mobile exhibition and program, interactive, pandemic influenza.

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On a multi-science culture in the construction of scientific literacy in developing countries

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Abstract: Taking the measurement of scientific literacy as a clue, this paper focuses on Miller's system which originated and developed in western country, and the problems it faced with while applied in China. Based on the origination of Miller's system and the whole context of the construction of public scientific literacy in China, this paper attempts to put forward a stratified structure to measure public scientific literacy and promote a multi-science culture in the construction of public scientific literacy in China and other developing countries.

Key words: Miller's system; measurement of public scientific literacy; living science; public understanding of science; science communication; science popularization

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Science Media Center and the Foster of Social Capital  
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Abstract: Science Media Center (SMC) to some extent constructs a platform for science communicators and science journalists; however, social capital theory just carries research on the social network and discusses how to enhance the stocking of social capital to promote the social development. The present study indicated that the establishment and development of SMC to a certain extent not only accomplished the goal of fostering and promoting social capital of individual members, but increased the growth of organizational social capital stock. Moreover, the further development of social capital also could react upon the activities of science media center.

Key words: science media center; social capital; foster