Media

Spreading the Word

The communication practitioner's role in the biotechnology arena is a significant one. Surveys show that much of the information that consumers have of science and to make sense of scientific breakthroughs is based on what they read in newspapers, watch on television, listen over the radio, and view on the Internet.

Among Americans, main information sources on science and technology (S&T) are television, newspapers, and the Internet. People in other countries including the European Union states, Japan, Russia, South Korea, and China identified television and newspapers as primary sources. India indicated television as the dominant source of S & T information with radio and friends/ relatives ranked ahead of printed materials (Science and Engineering Indicators 2008). Juanillo (2003) reports that for countries like Indonesia, Malaysia, Philippines, Thailand, and Vietnam, mass media was favored for information on science in general and biotechnology in particular.

Few people have direct experience with agricultural biotechnology or even direct exposure to scientists and researchers working in the field. Hence, media play a crucial role in providing people with the information necessary to make decisions about technology options and their potential risks and benefits. Another important role for media is that they allow citizens to gauge the climate of opinion around them which in turn influence what people will think about a certain issue (Scheufele, 2007).

The agenda-setting function of mass media postulates that media do not tell people what to think, but rather what to think about. The intensity of media coverage on a topic correlates with the public agenda, hence the level of importance of an issue

can be gauged by media coverage. Another theoretical perspective is the second-level agenda-setting process. It states that if media coverage concentrates exclusively on a certain topic (positive attributes of a technology, for example), these messages will activate positive rather than negative images and will be used by people to evaluate the concept of biotechnology. As a result of intensified media coverage and even if the amount decreases, the personal relevance of biotechnology as an echo effect will stay high (Bonfadelli, 2007).

A five-country monitoring survey of 46 national papers in five Asian countries, namely India, Malaysia, Philippines, South Korea, and Vietnam in 2002 and 2003 showed sustained media coverage on crop biotechnology. Navarro and Villena (2005) reported that local journalists were writing about biotechnology and followed developments of important newsworthy milestones such as the approval of a GM crop as in the case of the Philippines and India.

These theoretical perspectives and real case scenarios highlight the media practitioner as a key actor that can help increase awareness and understanding of biotechnology among various stakeholders and interest groups. As early as 2000 when initial Biotechnology Information Centers (BICs) were established, communication practitioners and/or government information officers were already identified as key stakeholders in the knowledge sharing initiatives. Aside from regularly networking with them by providing news updates and articles for publications, the BICs also invite them to media workshops to be briefed on latest issues and concerns; get updates on local research and development efforts; visit laboratory, field trials, and farmers' fields; and share experiences in communicating biotechnology. Exchange visits of journalists are also facilitated where they interact with colleagues from other countries as they visit research facilities and farmers' fields.

Writers from Egypt, Ghana, and Kenya in Africa; and Philippines, China, India, Pakistan, and Vietnam in Asia; share how they got interested in writing about crop biotechnology.

Linda Asante Agyei

From Negative to Positive Views About Biotech

By Margaret Karembu and Daniel Otunge

Like most journalists in Ghana, Linda Asante Agyei, a senior journalist with the Ghana News Agency (GNA), confesses to having held very negative views about biotechnology. Her negative perceptions were largely built on opinions and positions expressed by foreign news sources, mainly European, and other anti-biotechnology non-governmental organizations that have been very visible in the area. "I must admit it was very difficult accepting the truth that the application of biotechnology was not a ploy by the Americans to wipe out Africans from the earth using biological means."

Linda, who is currently pursuing a Bachelor of Arts Degree at the University of Ghana is a specialist in Science, Technology and Health reporting. She studied journalism at the Ghana Institute of Journalism from 1994-1996 and took up Advanced Reporting at the Africa Institute of Journalism and Communication in 2001. With over 12 years of experience in journalism, and heading the health desk of Ghana's only wire service, Linda's confessions cannot be taken lightly.

"While working at the health desk five years ago, I became very interested in science communication in general. This was triggered by an invitation to an international workshop on cowpea by the then Director General of Ghana's Council for Scientific and Industrial Research (CSIR), Professor Emmanuel Owusu-Bennoah. The interest deepened after attending subsequent meetings on biotechnology and agriculture. I learned that reporting on emerging, complex issues and technologies can be a daunting task for a budding journalist," she narrates.

Participation in Study Tours

After participating in two study tours to Burkina Faso and South Africa, and covering the Second Economic Community of West African States (ECOWAS) Ministerial Conference on Biotechnology held in Bamako, Mali in 2005, Linda became completely convinced about the potential benefits of modern agricultural biotechnology.

"In November 2004, I was lucky to be nominated by the Program for Biosafety Systems (PBS) to participate in a "seeing-is-believing tour of Bt cotton field trials in Burkina Faso," says Linda. The study tour, which was organized by PBS and the International Service for the Acquisition of Agri-biotech Applications (ISAAA) aimed at exposing the media to real products of biotechnology and forge linkages with local researchers as important sources of information on biotechnology in Africa. At the time, media reporting was fraught with highly sensational stories and foreign-based articles with inaccurate representation of the real aspects of the technology. An important outcome of this tour was improved and balanced reporting of biotechnology in Africa in view of media's acknowledged role as a popular source of biotechnology information by a majority of stakeholders. The study tour was also meant to prepare journalists for the Ministerial

Participants of the seeing-is-believing tour visit a cotton farm in Burkina Faso.

meeting on Biotechnology for ECOWAS States that was to be held the following year.

"Contrary to what I had thought would be giant cotton plants at the trial sites, I was amazed to see ordinary but very healthy cotton crop like the one I always knew and on touching and feeling it, I started questioning the motive behind some foreign articles I had read earlier portraying biotech products as monsters. I was also able to raise many of the questions I had about biotechnology to the local researchers and by the end of the three-day tour, my perceptions totally changed. Based on what I saw in Burkina Faso, I published many press articles that I strongly believe helped to re-focus the thinking of authorities in Ghana on the need to enact laws to facilitate research on modern biotechnology," she says.

Coordinator of Journalist Network

Linda's prolific writings on biotechnology enabled her to be elected as the first Ghana Chapter Coordinator of a network of journalists for Communicating Agricultural Biotechnology West Africa (RECOAB or *Reseau des communicateurs ouest Africain en Biotechnologie*).

RECOAB is an outcome of a media training workshop held in Bamako, Mali in 2005, in preparation for coverage of the Ministerial Conference on Biotechnology for ECOWAS states. ISAAA, in partnership with the Agricultural Biotechnology Support Project (ABSP II), the national institute of Mali - *L'Institut d'Economie Rurale* (IER) and USAID Mali, sponsored and organized the three- day workshop titled *Communicating Agricultural Biotechnology: Theory & Practice*. The workshop aimed at providing journalists with an understanding of the science behind agricultural biotechnology as well as an overview of the African agricultural biotechnology environment. The journalists also had the opportunity to interact with scientists and other representatives of the biotech sector in the sub-region. Participants left the workshop with a good amount of scientific background information, a briefing on the Ministerial event, and an introduction to West African spokespersons. The activity aroused great interest among the journalists who requested the organizers and other partners present for more capacity building events in the area. There were approximately 15 participants from the Malian media sector while ISAAA sponsored seven journalists from Burkina Faso, Cote d'Ivoire, Niger, Benin and Senegal.

The ECOWAS Ministers and senior policy-makers examined and adopted strategy documents for the development and use of agricultural biotechnologies at the country level. These documents focused on: an action

"Contrary to what I had thought would be giant cotton plants at the trial sites, I was amazed to see ordinary but very healthy cotton crop like the one I always knew and on touching and feeling it, I started questioning the motive behind some foreign articles I had read earlier portraying biotech products as monsters."

Prof. Konaté (right) and Dr. Ouola Traore (left), cotton specialists, talk to participants about cotton farming.

plan on biotechnology for the sub-region; the creation of Biotechnology Centers; the setting up of partnerships and cooperation between the North and the South; the framework for harmonizing biosafety regulations; the setting up of a Biotechnology Information/Communication System; and finally, the institutionalization of the Ministerial conference for West African countries.

In forming RECOAB, the journalists defined the aim and roles of the network thus: to provide a forum through which they (journalists) can share biotech information sources; discuss the credibility of sources, and receive feedback on their work from their peers. Country coordinators for Mali, Burkina Faso, Cote d'Ivoire, Niger and Senegal were also identified. RECOAB has

"Exposure study tours and hands-on capacity building are the best ways out of very poor science reporting in Africa."

since incorporated Anglophone West Africa countries of Ghana, Nigeria, the Gambia and Sierra Leone. It has also served as a point of contact for organizations who wish to involve and communicate with journalists and the public on the broad field of modern biotechnology. Member journalists have developed competencies in reporting agricultural biotechnology related issues and built a body of credible and balanced reporters on the subject. They have also cultivated relationships with representatives from the government, research institutes, universities and NGOs as reported in their various reports and Newsletters. Burkina Faso chapter for instance is already legally registered by the government and publishes a regular newsletter in French (The RECOAB News, 2008).

"Exposure study tours and hands-on capacity building are the best ways out of the very poor science reporting in Africa." And it worked for Linda who after attending a series of training workshops and study tours became an expert in biotechnology reporting for the Ghana News Agency. "I became so conversant with biotech technical jargons that whenever there was a story from the regions to be submitted to our headquarters, I would be called upon to edit and make sure everything was alright," she explains.

As fate would have it, many other opportunities followed in quick succession for Linda. For instance, she accompanied several African members of Parliament and senior policy makers to a study tour of South Africa's biotech crop fields, where she had a chance to eat a meal

"I became so engrossed in biotechnology reporting that I influenced the establishment of a desk and several files for biotechnology stories in the Ghana News Agency."

prepared from Bt maize. The event, which was co-sponsored by AfricaBio in South Africa and ISAAA *Afri*Center helped to cement her then growing passion for biotechnology reporting.

Trainer of Journalists on Agri-biotech

Thanks to all these rich experiences and international exposure, Linda would later take charge of publicity during the 3rd ECOWAS Ministerial Conference on Biotechnology, held in Ghana, in March 2007. Her skills and confidence in handling biotechnology matters grew to the extent that she became a trainer of other journalists. She has competently managed several media trainings where she competently handles the topic on "Effective Reporting on Agricultural Biotechnology" at local and regional workshops.

"I became so engrossed in biotechnology reporting that I influenced the establishment of a desk and several files for biotechnology stories in the Ghana News Agency. My mission is to help my colleagues to improve their grasp of and reporting on biotechnology," she says with the full confidence of a trainer of trainers (TOT).

Linda did not stop there. She is currently part of the technical team working on the country's biosafety framework. Her passion is to see Ghana becoming a biotech country in the very near future.

The RECOAB Country Coordinator says covering biotechnology in Ghana has been a major challenge for three reasons. First, most scientists are unwilling to give information to journalists when they need it. Second, the country neither has a biosafety law nor serious on-going modern biotech research programs. And thirdly, most reporters and editors are unfamiliar with the technology. "Even so, thanks to the formation of RECOAB, a lot has been done to solve some of the challenges, Linda reassures.

For instance, RECOAB country members were very instrumental in getting Parliament to pass the Legal Instrument (LI) to facilitate modern biotechnology research and development. "We helped to do this by writing and publishing stories critical of the Government and the National Assembly for failure to enact the Biosafety law to allow scientists to do their biotech work," Linda explains.

To further strengthen biotech reporting in Ghana, she suggests more exposure tours, hands-on capacity building workshops and awards scheme for biotechnology reporters.

Although Linda is fully aware of the fact that biotech crops are no silver bullets to the food insecurity in Africa and the rest of the developing world, she believes that the continent stands a better chance of becoming food secure by integrating such tools with conventional technologies.

She urges other African journalists to be wary of people with foreign agendas and whose opposition to modern biotechnology is not based on scientific evidence and facts. Journalists should also actively seek to popularize biotechnology reporting to their editors and gatekeepers in order to receive the prominence the subject so deserves. ❑

Melody Aguiba

Multi-Awarded Science Writer

By Mariechel J. Navarro and Sonny Tababa

In 2002, Philippine journalists were not too interested in biotechnology (Juanillo, 2003). However, a subsequent Philippine study (Torres et al., 2006) showed a change in attitude as journalists ranked along with scientists in being more open and optimistic about biotechnology. These findings are validated by a consolidated media monitoring study (Navarro and Villena, 2004; SEARCA BIC reports) from 2002-2008. Media monitoring involves the "systematic register and review of what the media tells about the world" (Nordenstreng, 2001).

The Philippine Biotechnology Information Center, officially referred to as the Southeast Asian Regional Center for Graduate Study and Research in Agriculture Biotechnology Information Center (SEARCA BIC), regularly scans national daily papers to analyze articles on crop biotechnology based on number of articles, topic of article, and tone (positive, negative, neutral). Data are analyzed to answer the following questions: What agri-biotech news stories come out in national newspapers during a given period of time? What is the content and tone of news? The consolidated study shows that there has been a significant increase in media coverage of agri-biotech articles, starting with only 279 in 2002, peaking to an all time high of 1,010 in 2006 or a total of 3,652 for the period, 2002-2008 (Table 1). On the average for the seven-year period, about 522 articles were written per year or 43 articles per month. In 2006, around 84 articles per month were written or almost double the average monthly output for the seven year period.

Of the total articles published between 2002-2008, about 80 per cent were positive in tone, 11 percent were neutral, and only 9 percent were negative (Figure 1). A cursory analysis of the articles showed that majority of the articles was supportive of government and private sector initiatives. Hence, there exists a favorable media environment for agri-biotech in the Philippines. It is interesting to note that among the stakeholders interviewed in 2006, policy makers relied on the mass media for information about agri-biotech. Other stakeholders used a combination of interpersonal and mass media as information sources.

SEARCA BIC has organized various activities for the Philippine media since its inception in 2000. Several media workshops have been organized enabling the BIC to identify a core group of science communicators who can be tapped to write articles about agri-biotechnology in major dailies. The media are invited to a 1-2 day workshop to familiarize them with crop biotechnology concepts and initiatives, as well as updates on the local research and development front. Learning strategies include lectures by local experts, laboratory exercises where participants get to be scientists for a day, video presentations, board/interactive games, and a tour of laboratory and greenhouse experiments as well as farmers' fields. The simple laboratory exercises that include the extraction of DNA from the participants' cheeks, enable the non-technical audience to appreciate key scientific concepts necessary to understand biotechnology.

Table 1. Media tracking of biotechnology articles and tone, 2002-2008.

Year	Positive Articles		Negative Articles		Neutral Articles		Total
	Number	%	Number	%	Number	%	
2002	168	60.22	49	17.56	62	22.22	279
2003	141	48.62	51	17.59	98	33.79	290
2004	196	74.24	29	10.98	39	14.78	264
2005	665	84.07	80	10.11	46	5.82	791
2006	915	90.59	53	5.25	42	4.16	1,010
2007	623	87.26	43	6.02	48	6.72	714
2008	227	74.67	26	8.55	51	16.78	304
Total	**2,935**	**80.34**	**331**	**9.06**	**386**	**10.60**	**3,652**

Sources: Navarro and Villena (2004); SEARCA BIC Monitoring Reports, 2002-2008

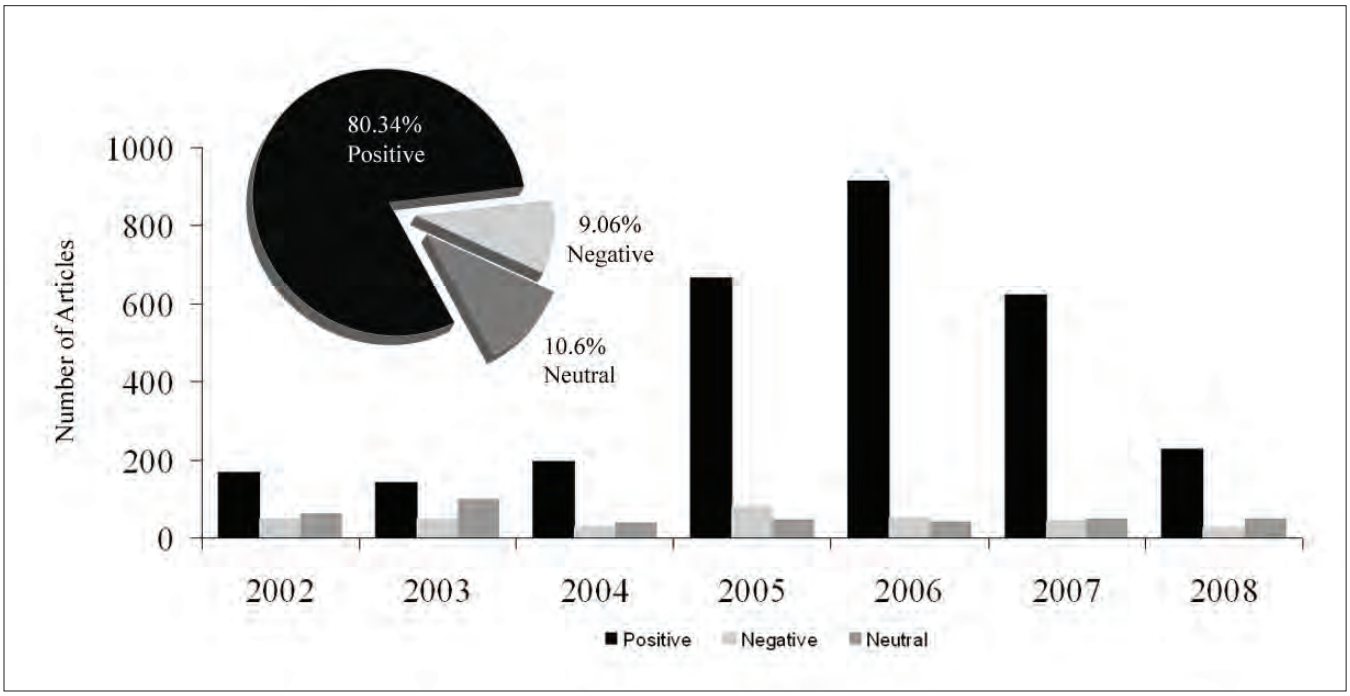


Figure 1. Tone of agri-biotech articles, 2002-2008.

Among those who participated in these media workshops was Melody M. Aguiba, a reporter of the *Manila Bulletin*, a national daily newspaper reputed to have the highest circulation figure in the Philippines. *Manila Bulletin* ranks as one of the top three national newspapers, along with the *Philippine Daily Inquirer* and the *Philippine Star*. A former freelance writer and a university teacher of journalism, Melody finished her Bachelor of Arts in Mass Communication from the Pamantasan Lunsod ng Maynila and completed the academic requirements for a Master in Business Administration from the same University.

Melody with her Gawad Galing award.

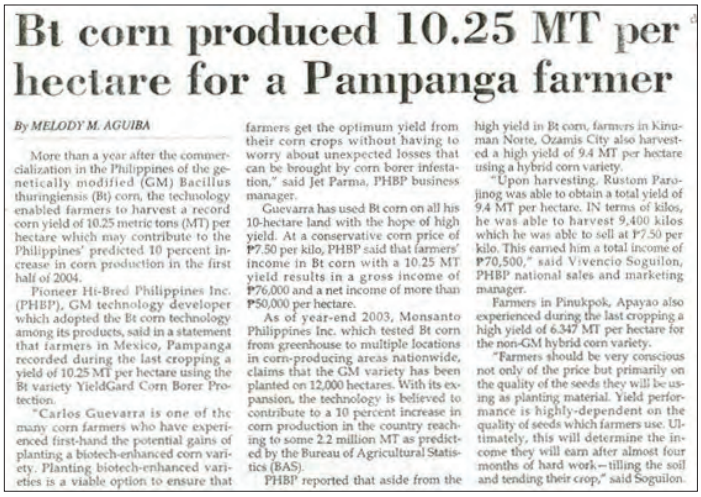
Power of Media to Educate

"As far as I can remember, writing has always been a passion. In high school, I took a journalism elective and eventually rose from being a staff writer to editor of the newsletters *Campus Light* and *Baptist Messenger*. Science also fascinated me." In college, Melody took interest in the Strategic Defense Initiative that was proposed by the United States government to use ground and space-based systems to protect it from attack by strategic nuclear ballistic missiles. She read about this in magazines such as *Discover* and *Popular Science*. "It is amazing how powerful a medium the magazines are to educate non-scientists like me," she says to illustrate the importance of popularizing science to the laymen. Eventually, her college thesis would be on a proposal for a television program on science and technology.

Melody is a prolific writer and has won several awards. She got the Best Article Award given by the United Nations Environment Programme in 2007, Reporter of the Year awarded by the Economics Journalists Association of the Philippines in 2002, 2003 and 2006, as well as the First Prize for Agri-business Journalism, Binhi Awards in 2002, 2006, and 2007. She won the First Prize in the Gawad Galing (Excellence Award) Jose Burgos Jr. Biotech Journalism Award in 2005, 2006, and 2007. The latter award is a project which the private sector-led Biotechnology for Life Media and Advocacy Resource Center and the BIC helped to institutionalize to "recognize journalists who excel in their quest for truth and help push the frontiers of scientific inquiry, with particular focus on biotechnology." Jose G. Burgos Jr. is a former press freedom fighter in the Philippines, and an award winning journalist (Jose G. Burgos Jr. Awards Program, 2006).

"Science in general, and crop biotech are concerns no country can ignore if it aspires for a leap in the economy. The Philippines is poor precisely because it has neglected science even if it is rich in natural resources on which it can have an absolute niche. Crop biotechnology is essential in food security especially during these times of food crisis. It also contributes to poverty reduction among poor farmers if only an intervention is made to help them migrate to this technology," says Melody. She adds that "A media person can contribute to poverty reduction and economic development if he thinks of these as a mission in life, if he deems writing to be both a profession and a vocation."

Based on the media tracking study of the BIC, Melody wrote 107 articles on biotech and related articles from 2006 to 2008. Melody avers that "there is a lot to write about biotechnology." Her biotech stories are slanted toward the business/ economic angle or how the technology could contribute to improving livelihood and the economic development of the country. Topics include Bt corn, hybrid rice, hybrid papaya, Bt cotton, the Philippines vast resources in biotechnology, the government biotech program, genetically modified crop value, biofuels, biotech research, and patenting issues and concerns. Since Melody writes for a business newspaper, the story has to connect to an economic issue for unless a story is used or approved for publication by the editor, there is no motivation to write these stories, she explains. *Manila Bulletin* does not have a committed space for science and technology *per se* except for the business angle on agriculture. It has a business features page, "Business Agenda" for such articles.



Bt corn produced 10.25 MT per hectare for a Pampanga farmer

By MELODY M. AGUIBA

More than a year after the commercialization in the Philippines of the genetically modified (GM) Bacillus thuringiensis (Bt) corn, the technology enabled farmers to harvest a record corn yield of 10.25 metric tons (MT) per hectare which may contribute to the Philippines' predicted 10 percent increase in corn production in the first half of 2004.

Pioneer Hi-Bred Philippines Inc. (PHBP), GM technology developer which adopted the Bt corn technology among its products, said in a statement that farmers in Mexico, Pampanga recorded during the last cropping a yield of 10.25 MT per hectare using the Bt variety YieldGard Corn Borer Protection.

"Carlos Guevarra is one of the many corn farmers who have experienced first-hand the potential gains of planting a biotech-enhanced corn variety. Planting biotech-enhanced varieties is a viable option to ensure that farmers get the optimum yield from their corn crops without having to worry about unexpected losses that can be brought by corn borer infestation," said Jet Parma, PHBP business manager.

Guevarra has used Bt corn on all his 10-hectare land with the hope of high yield. At a conservative corn price of ₱7.50 per kilo, PHBP said that farmers' income in Bt corn with a 10.25 MT yield results in a gross income of ₱76,000 and a net income of more than ₱50,000 per hectare.

As of year-end 2003, Monsanto Philippines Inc. which tested Bt corn from greenhouse to multiple locations in corn-producing areas nationwide, claims that the GM variety has been planted on 12,000 hectares. With its expansion, the technology is believed to contribute to a 10 percent increase in corn production in the country reaching to some 2.2 million MT as predicted by the Bureau of Agricultural Statistics (BAS).

PHBP reported that aside from the high yield in Bt corn, farmers in Kinuman Norte, Ozamis City also harvested a high yield of 9.4 MT per hectare using a hybrid corn variety.

"Upon harvesting, Rustom Parojinog was able to obtain a total yield of 9.4 MT per hectare. IN terms of kilos, he was able to harvest 9,400 kilos which he was able to sell at ₱7.50 per kilo. This earned him a total income of ₱70,500," said Vivencio Soguilon, PHBP national sales and marketing manager.

Farmers in Pinukpok, Apayao also experienced during the last cropping a high yield of 6.347 MT per hectare for the non-GM hybrid corn variety.

"Farmers should be very conscious not only of the price but primarily on the quality of the seeds they will be using as planting material. Yield performance is highly-dependent on the quality of seeds which farmers use. Ultimately, this will determine the income they will earn after almost four months of hard work – tilling the soil and tending their crop," said Soguilon.

A clipping of Melody's article about farmers and Bt corn.

Writing the Bt Corn Story

Melody has followed through many technologies from research to commercialization. She wrote about Bt corn being field tested by Monsanto in 2002, how it reached farmers fields in 2003, and why it continues to be a farmers' crop choice. She writes about other biotech developments such as use of sweet sorghum/ sugarcane for ethanol production, as well as natural ingredients for pharmaceutical/nutraceutical uses.

As a writer, Melody faces a few hurdles in writing about science and technology. One is the difficulty in understanding technical terms. She exerts effort to look up the meaning of words that scientists might find very basic or too simple for technical people. Another barrier is inaccessibility of certain scientists. Melody opines that "Some scientists are unwilling to communicate and divulge information. They are unable to connect science research with reality, with the big picture of helping people and the economy as a whole." She is frustrated that in the country, science is not part of a working plan or if existing, does not seem to work. "Leaders have so far been unsuccessful in making it a truly powerful tool for economic development."

Nevertheless, the *Manila Bulletin* writer offers some suggestions: organize seminars on science for journalists, and make available science books that are simply written, yet comprehensive and enlightening. She also recommends that different agencies (science, government, and media) collaborate on a more massive scale to push science information dissemination.

BIC-organized media workshops that Melody has attended were useful, she says, as resource persons introduced biotechnology concepts particularly on genetically modified organisms. She recommends tackling a broader view of biotechnology with additional topics on pharming where the country has potential to explore, or on biotech tools such as bioinformatics. Pharming or molecular farming is an emerging new paradigm in the biotechnology arena which aims to produce pharmaceuticals,

therapeutic proteins and vaccines. "It is important to have good resource persons who are patient, confident and open to the media." She cites the case of an expert from the private sector who motivated her to write a series of articles on Bt corn. The expert was able to popularize concepts and make biotechnology relevant for a media person to comprehend. The series of articles that Melody wrote traced the process that Bt corn went through from field trial to eventual commercialization.

Learning About New Technology

The lady writer represented media practitioners in a workshop *Farmer-to-Farmer: Sharing Experiences Related to Agricultural Biotechnology* in December 2003 where she had the opportunity to interact with farmers and media practitioners from several Asian countries. The BIC also facilitated her attendance as part of the Asian delegation of 15 journalists from Bangladesh, India, and the Philippines to Coimbatore, India to be oriented on the fruit and shoot borer-resistant (FSBR) eggplant technology in November 2005. The Philippine group was composed of writers from the Business Mirror, Philippine Daily Inquirer and Manila Bulletin. The writers were briefed on the issues and concerns of Bt technology, specifically in the development of FSBR eggplant. A field visit was conducted at the Review Committee for Genetic Modification trial of MAHYCO Bt eggplant Hyb 11 in Nathae Goundan Pudthur Village to see the performance of the MAHYCO Bt hybrid eggplant over regular non-Bt variety. Articles of that visit were published in national dailies and contributed to an awareness of the next potential biotech food crop due for commercialization in farmers' fields (ABSP II Newsletter, 2006).

"Feedback about articles I write is important but there is no way to directly gauge their impact. However, I observe developments or take-up of the technology in the field, whether it is advancing toward commercialization or whether farmers are picking it up." She opines that positive acceptance of a technology or its commercialization is an indirect, intrinsic reward for media practitioners like her to write about a specific topic.

Melody, together with Joel Paredes, represented the Philippines as part of the Asian delegation to Coimbatore, India.

Melody sees the potential of science and technology in national development. She finds fulfillment and value in getting enlightened about how science contributes to solving problems. With partners, she has started editing a magazine *Growth Revolution* which focuses on poverty reduction with technology as one of the central factors. She wants to focus on S & T, recognizing its impact on how countries like India and China have started emerging from poverty and how the Philippines can attain it too. She typifies journalist-respondents in the Juanillo study (2003) that showed that journalists in the Philippines, particularly those whose primary beat is science and technology, were moderately to highly interested in biotechnology and have a high regard for the role of science and technology in the development of agriculture in the country. ❑

Yingjie Huang

Bringing Biotech News to Chinese Readers

By Tian Zhang

The Aweb, an online Chinese agricultural website (http://www.aweb.com.cn/) of the Nongbo Digital Technology, Co. Ltd., is committed to timely coverage of the latest news and policies about agriculture, the countryside and farmers, as well as services for agricultural specialists and producers. Aweb visitors include officials, agriculture enterprises, dealers, farmers, students and researchers.

Yingjie Huang is the editor-in-chief of the news section of Aweb. She has been covering the agriculture scene for the last five years after completing her undergraduate degree in plant genetics and breeding from the South China Agricultural University. Her foray into website writing started with her interest in information searching and the "realization that electronic-based information is a fast and far reaching medium to disseminate scientific information."

Aweb mainly covers issues on conventional agriculture. Yingjie says that agricultural biotechnology and genetically modified (GM) crops especially in the international scene are seldom written about. This is primarily due to unavailable sources of agricultural biotechnology information and the language problem. "Most Chinese websites have difficulty in collecting, reading and comprehending English information. We are in dire need of information about agricultural biotechnology and GM crops, especially from abroad. Many of Aweb's readers who have science or agriculture backgrounds have expressed interest for such information." The lady editor is positive about crop biotechnology and says that GM crops can help accelerate varietal breeding and boost crop improvement. However, she thinks that the current release and production of GM crops must be preconditioned by genetic stability.

Yingjie states that Aweb should gradually shift its coverage focus from conventional agricultural information to include modern agricultural biotechnology. "We should attach greater importance to comprehensive global information to meet the readers' needs. These include scientific research results published by international institutions, agricultural policies, laws and regulations of various countries, research reports of various public and private agencies, field trials and commercialization of GM products, and institutional cooperation." Yingjie says that such information is available from the International Service for the Acquisition of Agri-biotech Applications' (ISAAA) e-newsletter Crop Biotech Update (CBU) that the China Biotechnology Information Center (ChinaBIC) translates into Chinese. "Thanks to the Chinese CBU, we have been enlightened about the approach and content of information about crop biotechnology."

As editor-in-chief, Yingjie frequently scans the Internet for news sources. She visited the website of the Chinese Society of Biotechnology (CSBT) to check on their events. It was there that she saw the Chinese translation of the CBU. CSBT, an information exchange center on biotechnology and

Screenshot of the home page of Aweb.

which publishes the journal *China Biotechnology*, hosts the ChinaBIC. Since then she regularly includes the CBU in her news section and selects pertinent information which she then forwards to the editors of the science and technology section.

"With the continuous development of biotechnology and its constant application in daily life, biological agriculture will witness an information explosion and increasing public interest in the field," Yingjie notes. "Thus, there is a need to popularize biotechnology information. In addition, we need workshops and seminars as well as training courses on popularizing biotechnology information. We need to promote science communication to better appreciate fair evaluation of research in biotechnology, and understand the transformation of biotechnological results into practical applications." ❑

Mohamed Elsaied Darwish Mostafa

Of Bt Cotton and Writing

By Ismail Abdel Hamid

"Writing is a life commitment. It gives me the opportunity to deliver my ideas to several thousands of readers in a very short time." Mohamed Elsaied Darwish Mostafa believes a science writer has a very important role in society – "My simple philosophy is that society can't survive without scientific advancement and updates. Science in general is the key for human beings to survive. It helps simplify and enhance our lives." He knows that translating scientific concepts and issues is a way to get people to understand what science has to offer mankind.

Mohamed writes a weekly page *Borset Alcotn* (Cotton Stock Market) for the daily newspaper *Al-Alam Al-Youm* (The World Today) and the cotton trade magazine *Borset Al Cotton* which target Arabic readers in Egypt and other Arabic speaking countries. He also writes for the international *Cotton Outlook* magazine. "My newspaper encourages articles on the applications of science

and technology, especially those related to societal development. There are weekly annexes related to health, agriculture and education. My specific field of interest is cotton as a crop and as an industry and I am interested in these news around the globe. I cover the benefits and risks of any new variety or technology related to cotton."

Workshops, conferences, and seminars are a major source for topics that Mohamed writes about. In these gatherings he is able to interview eminent scientists and experts on various topics of interest. In particular, he remembers attending the BioVision 2006 conference at the Library of Alexandria (Bibliotheca Alexandrina) in Egypt. BioVision is an annual gathering of opinion leaders and prominent scientists where they engage in an active exchange regarding the life sciences. The Egypt Biotechnology Information Center (EBIC) director arranged a meeting for Mohamed with Dr. Clive James, International Service for the Acquisition of Agri-biotech Applications (ISAAA) founder and chair. Dr. James was a speaker on the global status and future prospects of biotech crops during a plenary session on agri-food and environment. "I had a long discussion with him about Bt cotton. As I am interested in cotton in general, it was a great interview. I realized how impressive the India experience is with regards Bt cotton. It gave me a new and wider perspective on how a cotton variety can help change the life of small scale cotton farmers, whom I know are suffering from problems such as low yields and insect infestation. This interview made me focus more on biotechnology and science communication."

Mohamed (left) listens to Dr. Clive James expound on Bt cotton.

> *"I feel responsible to my readers. I have to carefully and honestly prepare my articles. I have to check the source of information and choose only the most credible sources."*

Writing About Bt Cotton

Mohamed has since then written a series of articles to cover the global and national activities regarding agricultural biotechnology applications most of them with the assistance of EBIC. He said he relies on ISAAA's annual global status report of the commercialization of GM/biotech crops which serves as a macro view to enable him to discuss the possibilities for cotton, being Egypt's major commodity. "In addition, I follow up developments regarding the field trials of Bt cotton in Egypt. Through media visits that EBIC facilitates, it is easy to distinguish between the conventional varieties of cotton, which is infested by bollworms, and the Bt cotton varieties that are bollworm free. I write about my ocular visits and mention how the planting of Bt cotton can save on the use of chemical pesticides and how this will redound to more income to farmers and a safer environment." Mohamed believes that crop biotechnology is one of the most important technologies in recent years. "It has caught the attention of both rich and poor, scientists and farmers, policy makers and academics. It interests students and housewives as well. It provides benefits to farmers, and is safe to human health and the environment."

The writer took up a sociology degree from the University of Alexandria in Egypt and was able to


90٪ من مساحة القطن بالولايات المتحدة منتج بالتكنولوجيا الحيوية و81٪ في أستراليا

صرزرعت محصولا منتجا بالتكنولوجيا الحيوية لأول مرة

دعوة لسرعة تبنى إطار تشريعى يحفز التوسع

A newspaper clipping of Mohamed's article on crop biotech.

benefit from a journalism observation study tour in Washington, DC and New York, and a customer service and relationship building training course at the Pennsylvania State University. As a writer, "I feel responsible to my readers. I have to carefully and honestly prepare my articles. I have to check the source of information and choose only the most credible sources. All these help make an excellent report or article."

Journalists and media specialists need credible, unbiased, and transparent information sources says Mohamed. "EBIC plays an excellent role in this area. Through its publications and continuous contacts with media through workshops, it provides communication practitioners like me with the most recent information and news in the field of biotechnology, particularly in its role in agricultural productivity. This is an important requirement of our work." Mohamed also mentions that he relies on other information sources like the video on the Bt cotton story in India, the Arabic version of the weekly Crop Biotech Update, and Roayaa, EBIC's Arabic newsletter.

Attendance in Workshops

Aside from EBIC media workshops, he attended an international conference on *Innovative Aspects of Biotechnology and its Better Awareness and Dissemination* sponsored by ISAAA and other partners. "During this meeting in Islamabad, Pakistan, I met with different scientists from different Islamic countries. It was a great opportunity for me to meet with experts from Malaysia, Bangladesh, Pakistan, Syria and the Philippines. I covered this workshop in my reports. I was also able to discuss with other journalists from other Islamic countries the challenges we face and how to properly handle them."

In Egypt, Mohamed notices a greater coverage on crop biotechnology "but much more needs to be done. We need to focus on its application in developing countries and tell readers how important this technology is for poor people. We need to provide information to policy makers so they can make faster decisions based on the right information. The public must be given a continuous flow of authoritative information." He suggests more opportunities for media persons like him to participate in international communication workshops and field visits where they can talk with farmers and write about their success stories.

Receiving Feedback

But writing about science in general and biotechnology in particular is not as easy as it sounds. Mohamed gets the most feedback about his articles from people who do not believe in the technologies he writes about. "I do not know how they can refuse science and the benefits they bring. I think we have to educate them about the importance of new technology particularly to poor people. I feel like blaming myself if the information does not get across."

Nevertheless, Mohamed is optimistic about the future coverage of crop biotech issues in the media. "I can see myself as one of the key journalists explaining key issues. I believe in the technology and how it will help the poor." ❑

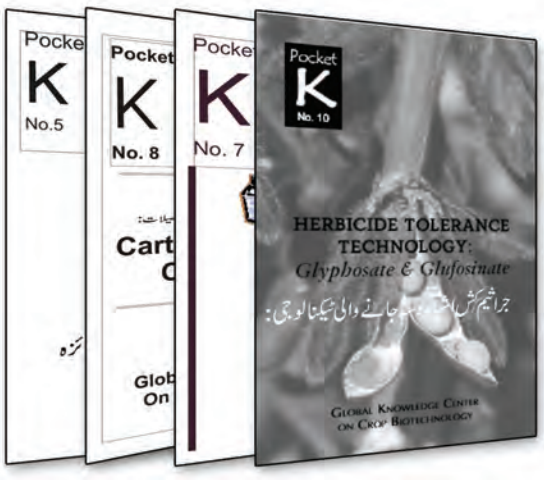
Hafsa Siddiqui

Learning Biotech Advances by Translating Biotech Publications

By M. Iqbal Choudhary

Hafsa Siddiqui is a researcher and translator at the Department of Mass Communication, Karachi University, Pakistan and concurrently a doctoral student in communication. Her primary job is to translate scientific articles from English to Urdu, Pakistan's major language. The translation of important scientific publications enables more people to know about certain developments which otherwise would not be possible for those who cannot understand English or do not have access to these materials.

"About a billion of the world's population are dying from hunger and starvation. People living in third world countries don't have enough food. In Pakistan, newspapers are full of stories of breadwinners committing suicide because they don't have enough money to feed their families, and mothers selling their children to save them from hunger and poverty. This is really an alarming situation in a country where agriculture is the backbone of the economy. Pakistan needs to take necessary steps to reform its agricultural system. This can only be done by educating farmers on the latest methods of cultivation, and new developments in agricultural inputs and research," says the Pakistani translator.



Pocket Ks translated to Urdu.

"In the future we will have a more difficult time in feeding our growing population. We need to use advanced technologies such as biotechnology and genetic engineering, which help in producing food with better quality, better appearance, enhanced nutritional traits, longer shelf life, and crops with resistance to certain pests and diseases. Many countries such as India, China and Brazil have adopted modern technology and have reaped significant socio- economic and welfare benefits," adds Hafsa.

Hafsa's encounter with crop biotechnology as a topic of interest began two years ago. The Pakistan Biotechnology Information Center (PaBIC) commissioned her to translate the Pocket K crop biotechnology series and Briefs published by the International Service for the Acquisition of Agri-biotech Applications (ISAAA).

"At that time," Hafsa recalls, "I was not aware of the achievements of biotechnology especially genetically modified (GM) foods and Bt crops. I thought that genetic modification was harmful to human health and the environment and that it would destroy our crops. I was a lover of organic

and naturally cultivated food, but at the same time I was worried about the food crisis."

Going through the ISAAA publications, Hafsa was inspired by this technology. "My perceptions about biotechnology were clarified and I realized that this technology was developed to meet the food challenges of the 21st century. Biotechnology is technology for the poor population of the world, those who face hunger. I got interested in this technology so I searched for materials, gathered information and wrote articles for newspapers to promote awareness among the general public and policy makers. I wish Pakistan will become part of the stories of Pocket Ks and Briefs. The success stories of Pakistani farmers will inspire others, and they will see Pakistan as an example of how biotechnology can help them. After all, the end users of this technology are the farmers. Awareness among the general public is also needed and PaBIC is doing well along this line. I have attended a media workshop, visited its website, and worked for its newsletter."

"I realized that this technology was developed to meet the food challenges of the 21st century."

Hafsa reiterates that promoting biotechnology is of utmost importance. "Creating awareness among farmers, mass communicators, scientists, and policy makers is very essential, and ISAAA and PABIC are fully committed to this cause. ISAAA is providing a platform to perform this job through knowledge sharing. Scientists are doing their job, but without turning media's attention toward what they are doing, objectives cannot be achieved. PABIC is putting its emphasis on media, which is on the right track." ❑

Edita Burgos

Revolutionizing Media's Role in Biotech Advocacy

By Jenny Panopio and Rochella Lapitan

An epitome of a noble wife who stood by her husband from the time he was a press freedom fighter and later as an agri-biotechnology advocate, is Dr. Edita Burgos (fondly called Dr. Edith), wife of the late Jose "Joe" G. Burgos, Jr., a revered icon in championing Philippine independent journalism. As a vanguard of the "Alternative Press", her husband established the Jose Burgos Media Services that published the WE Forum, *Malaya* (Free), Midday, and *Masa* (Mass Base). For many years, these were the only effective opposition papers of unrelenting pursuit for truth, justice and objectivity during the height of martial law (Philippine Communication Centrum Foundation website). Thus, he was recognized as one of the world's "50 Press Freedom Heroes of the

Century" by the International Press Institute in 2000 (Vanzi, 2003).

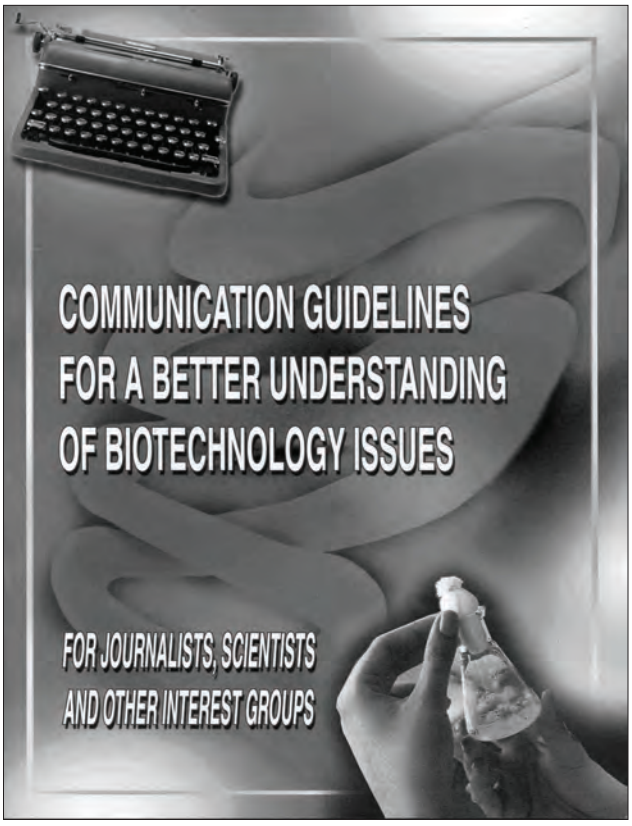
"Right after Martial Law was dismantled and democratic processes were restored in the country, we decided to serve another sector that is least served, and that is the farmer sector," recollects Dr. Edith. In 1988, the couple decided to live a modest life and engage in farming in their 12-hectare farm in San Miguel, Bulacan. "We decided to live a simple life by being farmers and later be able to write for and about farmers," she says. Dr. Edith opted for an early retirement from teaching Home Economics at the University of the Philippines (UP), joining Joe in their farm.

To better understand farming, her husband attended conferences, workshops and agri-trade fairs that would further enhance his understanding on agricultural technologies and practices. "Joe saw that science could help farmers. He saw that farmers need not have a difficult time if only certain technologies were available to them. Joe realized that their exposure to the media can be utilized to bring agricultural information to the targeted users," Dr. Edith says.

As an active farmer and a developmental journalist, Joe then anchored a weekly radio program over DZMM-ABS, *Sa Kabukiran* (In the Farm Fields) which was adjudged as ''The Most Outstanding Agricultural Radio Program'' in 1996. An educator by nature, Dr. Edith joined him in anchoring another agriculture-based radio program in Radyo Veritas where she discussed women empowerment on peasantry-related issues.

Using the mass media, Joe became a partner of research and agricultural development experts through his writings and radio talks which ranged from practical farming methods to the adoption of relevant, affordable and environment-friendly technologies.

"We believed that we would advocate for technologies that could help improve the lives of the farmers and one of these technologies is biotechnology," Dr. Edith mentions. As they started biotechnology communication to the public, they were challenged with the query: "Why would the Burgoses advocate for a technology that is not yet even proven to be safe?" Dr. Edith judiciously says, "We have never heard of anyone who died from eating products of biotechnology. Yet, we have heard a lot about those who died because of starvation. So between the two choices, we decided to serve farmers by making them understand biotechnology before it was too late."



Communication guidelines developed jointly by the Jose G. Burgos Media Services, Inc. and ISAAA.

Bridging the Scientists and Communicators

Dr. Edith and Joe believed that a link "may bridge the science-based information on biotechnology, from the scientists to the communicators, and from the communicators to the farmers." Being long time media practitioners, the couple saw the important role of the media in educating the public on the science and facts of biotechnology. "The media were not well-informed, hence, so were the farmers," Dr. Edith stresses.

To start-up the synergy between the scientists and communicators in bringing credible and factual biotechnology information to the public, specifically to the farmers, the International Service for the Acquisition of Agri-biotech Applications (ISAAA), in collaboration with the Jose G. Burgos Media Services, Inc., developed a handbook on *Communicating Guidelines for a Better Understanding of Biotechnology Issues: For Journalists, Scientists and Other Interest Groups*.

This handbook is a good example of what scientists and journalists can do to help sweep away the biotech information highway of roadblocks and other obstacles. The Guidelines was crafted from the guiding concept of the International Food Information Council Foundation (IFIC) on communicating emerging science on nutrition, food safety and health. In addition, Filipino journalists, through the Philippine Press Institute, provided inputs in the published guidelines relevant to the Philippines (Communicating Guidelines for a Better Understanding of Biotechnology Issues, 2001). Dr. Edith served as the Assistant Project Director of the Jose G. Burgos Media Service's working group when the handbook was published in 2001.

The Biotechnology for Life Media and Advocacy Resource Center

In the early 2000, public understanding and appreciation of biotechnology in the Philippines was generally low. This was further worsened by strong anti-biotech advocacy that waged through the media and at the local level. There were several efforts to support the public information campaign on biotechnology undertaken by various government and non-government agencies, but these were not yet sufficient to create a strong impact on the public.

The Philippines' Department of Agriculture (DA) Biotechnology Implementation Unit solicited for a communication proposal that would set up a "national movement in biotechnology," to strengthen and integrate the existing public information campaign into a pro-active, integrative and aggressive campaign. The J. Burgos Media Services, Inc., together with other players in biotech communication, was actively involved in the conceptualization of the biotech communication program.

However, Joe had an untimely death, and two years after, on January 10, 2005, the Biotechnology for Life Media Advocacy and Resource Center (BMARC), a national multi-stakeholder umbrella of biotechnology agencies that conduct information, education, communication campaign in biotechnology, was born.

"To keep his memory alive – and the kids were begging me to do that, – I decided to continue BMARC," Dr. Edith said. Currently, she manages BMARC as its Executive Director.

The BMARC binds together the government and the private sector through the DA, the Department of Science and Technology's Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (DOST-PCARRD), the Southeast Asian Regional Center for Graduate Study and Research in Agriculture through the Biotechnology Information Center (SEARCA-BIC), the Biotechnology Coalition of the Philippines (BCP), and the J. Burgos Media Services, Inc.

BioLife Magazine features biotech stories for a general audience.

Through collaboration, complementation and coordination, BMARC deploys a multi-media and multi-sectoral approach to public information campaign on biotechnology.

BMARC reaches out to different stakeholders through its BioLife Magazine that features news and stories on biotechnology for a general audience. To date, BMARC has already published 17 issues of this magazine since its launch in January 2005. The SEARCA BIC has been a critical partner as a distribution channel for the magazines to different stakeholders in the countryside through its biotech outreach activities and through its website.

The Jose G. Burgos, Jr. Awards for Biotech Journalism

Biotechnology is a highly technical and abstract science for the media. Thus, communicating biotechnology to the general public is not a simple task for a science journalist. With this in mind, BMARC saw the importance of recognizing science journalists who write accurate and well-researched biotechnology news and features.

Gawad Galing (Excellence Award) is designed to recognize the efforts of journalists in writing stories on biotechnology in national newspapers. Specifically, the Award aims to recognize outstanding efforts of national media practitioners in disseminating information on biotechnology to help motivate and sustain the interest of national media and to help develop public awareness and understanding on biotech," Dr. Edith mentions.

The *Gawad Galing* for Biotech Journalism was launched in 2005 to honor Filipino journalists and establishments popularizing biotechnology through their news reports. Later on, the Award was named after the late Joe Burgos, Jr. The Jose G. Burgos, Jr. Awards for Biotech Journalism is a collaborating endeavor of the BMARC consortium. SEARCA BIC, as member of the consortium, plays a vital role in providing the year-round news clippings on biotechnology from several national dailies. SEARCA BIC monitors media coverage on biotechnology to obtain a general idea of the nature of media coverage that biotechnology gets. These collected news, articles and news features are forwarded to the judges for the Biotech Journalism Award. The SEARCA BIC also sits as a member of the steering committee of the Awards.

"We at the J. Burgos Media Services, Inc. cannot do it alone, we have our partners from the BMARC assisting us for the success of the Biotech Journalism Award. One senior staff from ISAAA was also tapped as one of the judges for the Biotech Journalism Award. She also sits as a technical advisor to the Communication Program of the Department of Agriculture," adds Dr. Edith.

"We must empower the media and provide them trainings to encourage them to write."

During the 2008 J. Burgos Biotech Journalism Awards, ISAAA and SEARCA BIC were conferred with special citations for their exemplary contributions in biotechnology initiatives in the Philippines - ISAAA for brokering the transfer of biotechnology applications in the country and for supporting the National Programs through R&D and capacity building initiatives, and for SEARCA BIC's efforts in promoting public understanding and acceptance of biotechnology in the country.

"It is really a collaborative effort of agencies with a common interest of sustaining and augmenting the positive perception of the public in biotechnology through the recognition of media's contribution. And today, our vision of encouraging the media has tremendously been realized as we see more and more of them writing about biotechnology each year," Dr. Edith says proudly.

The Jose G. Burgos, Jr. Awards for Biotechnology Journalism remains to be the foremost Award that recognizes biotech journalists in the country. Dr. Edith hopes to bring in the community papers and to broaden the range of the Award from print to broadcast media in the years to come. "If we can find partner agencies that may sponsor cash prizes for the entries from community newspapers, many local reporters in the community will be convinced to write about biotechnology," she says. "We should also acknowledge the role of broadcast media in effectively influencing the perception of the public on biotechnology. If they will also be informed and conferred, many of them will be encouraged to spread the word of biotechnology," adds Dr. Edith.

Heading Towards Sustainable Biotech Advocacy

To maintain the positive environment of biotechnology in the country, Dr. Edith also cites that "we must empower the media and provide them trainings to encourage them to write. If we educate them with the contribution of biotechnology and bring them to those with first-hand experiences in biotechnology adoption, then, they will surely write more success stories." She mentions that "we should also extend our relationship with the gatekeepers of media establishments. We may invite the editors and columnists to our outreach activities. BMARC has positioned itself with compelling linkage to the media. Thus, it can be a delivery channel of ISAAA in reaching out to these media people," opines Dr. Edith.

ISAAA has identified the media as a key partner in communicating the benefits of biotechnology. Yearly, ISAAA conducts country media briefings on the highlights of its Annual Review on the global status of commercialized GM/biotech crops. This annual event produces thousands of publications and media and news releases. In 2009, the Philippine media briefing was held in partnership with BMARC, National Academy of Science and Technology (NAST) and SEARCA BIC. The event was attended by several media practitioners from the national dailies resulting in media and photo releases around the country.

Looking forward to sustainable advocacy, Dr. Edith underscores the need for continued partnership among the frontliners of biotechnology advocacy and adoption in the country. "ISAAA should continue to become a persistent broker of biotechnologies, linking various stakeholders from government and private sectors to provide funding for technology generation for the benefit of the farmers. The BIC has established itself as a catalyst of information initiating the networks in the biotech

community. Through its facilitation, the BMARC consortium may work hand in hand in responding to other communication needs. Collaboration, cooperation and networking are needed to address communication issues in the Philippines. Our relationship must be sustained to achieve our common goals," she suggests.

To sustain long-term advocacy, Dr. Edith envisions their group to become a Foundation with established finances reaching out to more and more stakeholders. Truly, Dr. Edith has the heart of her husband in advancing biotechnology revolution in the country. ❑

Wandera Ojanji

Empowering Journalists to Effectively Report on Biotechnology

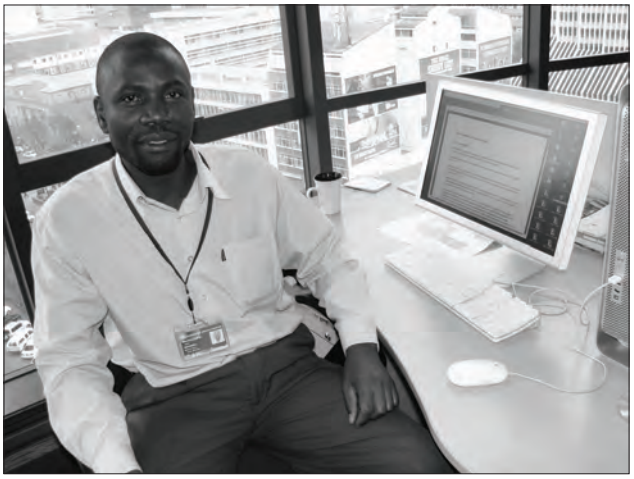
By Margaret Karembu and Daniel Otunge

He is considered one among the most authoritative journalists on biotechnology in the East African region and for valid reasons. Wandera Ojanji has extensively published solid, well researched and analytical articles on biotechnology since joining journalism 10 years ago, and particularly so over the last three years. And although he found himself in the newsroom by accident, he is not a science writer by accident.

"I was working for a consultancy firm where my work involved a lot of technical report writing and editing. While there, I made a resolve to enroll for a Post Graduate Diploma in Journalism at the School of Journalism and Mass Communications at the University of Nairobi to improve my report writing and editing skills," explains Wandera. "During my internship at the Kenya Forestry Research Institute, I came across very interesting information on forestry and related socio-economic issues requiring public discourse, which inspired me to also start writing for newspapers. The articles appeared to have an impact on the science editor at the Nation Media Group, one of Kenya's largest circulating dailies, who then took me on board as the paper's Science Correspondent."

One of the few journalists in the region who have specialized in science reporting, Wandera's passion for sciences can be traced back to his school days at the prestigious Alliance High School where he deliberately pursued the sciences ending up with a Bachelor's degree in Forestry from Moi University in Kenya.

"Indeed, it is out of this obsession for 'life forms' that motivated my drive for science reporting, especially considering that the Kenyan media hardly recognizes and rewards science journalism," Wandera confesses.



Wandera Ojanji at his office in Nairobi.

Wandera cites the case of *The Standard* and *The Nation* newspapers – the two daily newspapers that boast of having the highest circulation figures both in Kenya and the East and Central Africa region (350,000 and 500,000 respectively), and, which he has previously worked for. "These are the only two newspapers with special sections reserved for science and technology issues. However, these sections do not carry as much weight as other sections such as business, entertainment or politics," he says.

Inadequate Media Coverage on S & T

"It is possible that this low regard for science reporting is partly to blame for the rather poor or inadequate media coverage of science and technology compared to other areas such as politics, sports and business. The coverage is even worse for biotechnology reporting and science in general which is mainly restricted to small science sections in the various newspapers such as *Horizon* in the *Daily Nation* and *Panorama* in the *Standard*."

Wandera believes the low treatment and appreciation of science and technology by many editors and other gatekeepers is partly due to the fact that many of them do not have a science background and therefore lack basic understanding of science and technology issues and crop biotech in particular. Reporting on biotechnology is further complicated by the fact that many would- be-writers find it highly technical and very complex. Worse still, many of the gatekeepers do not appreciate the challenges in science writing.

"Unless the story carries controversy, then it is not a story. Issues are not important. It is the prominence of the people, particularly politicians and not scientists, that makes the news," states Wandera. "Many of the innovations in biotechnology hardly arouse the interest of editors."

Indeed, lack of adequate capacity to comprehend agricultural biotech issues by both writers and editors have been a major contributory factor to the low and oftentimes poor coverage of biotechnology in Kenya and the region.

Things have however been different for Wandera who has combined his professional training as a journalist with his science background to independently and authoritatively report on modern biotechnology, leaving little room for unsubstantiated opinions.

According to Wandera, agricultural biotechnology is just another technological advancement in plant breeding, with certain aspects of the technology, particularly genetic engineering, eliciting high levels of emotions among the general public including even scientists. "But as a writer, I have tried to be as impartial as the profession demands, being fair and objective in my reporting. In my opinion, science is the engine behind plant breeding and development."

Capacity Building Activities

Wandera attributes his better understanding and increased reporting on biotechnology to the various capacity building activities he has benefited

Wandera exchanges contacts with participants during one of the OFAB meetings in Nairobi.

from, conducted by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) *Afri*Center. These have come in different forms – from hands-on trainings to exposure visits in Kenya and abroad.

"I was one of the journalists from the Eastern Africa region who benefited from an intensive media workshop that tested a UNESCO Multi-media training kit (MMTK) in Addis Ababa, Ethiopia in 2006," says Wandera. The workshop, which adopted a participatory approach to learning, brought together biotechnology and media experts to test and localize the Multi-Media Training Kit to improve reporting of the subject using relevant Africa examples. This was made possible through presentations by scientists and the media experts, role play, teaching aids and field visits. In addition, the media trainers evaluated the trainee journalists through individual assignments to gauge their understanding of the issues discussed.

"I had read and written about biotechnology for several years. But, I had never come face to face with genetically engineered crops. This completely changed with my visit to South Africa."

On their part, the journalists wrote articles and/or produced radio and TV news' clips based on presentations and direct interviews with the experts.

And, according to Wandera, adequate learning did take place. "One aspect that I really found valuable in improving story writing skills and style was the thematic area on *Developing New Story Angles* where real biotech-related examples were used to guide the "unpacking" and "packing" process. "Using various press releases and past articles for example, we were able to identify various biotech story angles such as economic, environmental and social benefits; factors motivating expansion of biotech crops' farming; the political and policy implications of biotechnology adoption/non-adoption; biosafety issues; ethical and religious issues; status of biotechnology-globally, regionally and locally; conflicts in biotechnology; public perceptions, among many other story angles, all of which would be very attractive to an editor. This was in sharp contrast with what many of us had cited as obstacles to writing on the subject – highly technical and complex. This particular media training in Addis Ababa greatly changed the way I write on biotechnology – both in style and content," states Wandera. "ISAAA should conduct more of these trainings for journalists as a way of building their capacity and consequently improving the quality and quantity of coverage of the subject."

Wandera was also in the company of Kenyan policy makers and legislators who participated in a biotechnology fact finding mission to South Africa in 2006. "These capacity building activities have made all the difference in my professional career. "I had read and written about biotechnology for several years. But, I had never come face to face with genetically engineered crops. This completely changed with my visit to South Africa. Listening to South African authorities explaining how they have commercialized biotech crops, and the benefits

Printed materials and videos on biotechnology.

they were reaping from the technology, was indeed very reassuring. And, listening to farmers talking about the benefits and how the technology had changed their lives reinforced my resolve to increase writing on the subject and especially on the need for a facilitative legislative process. True to his word, Wandera wrote many articles on the Biosafety Bill process in Kenya that could be attributed to its eventual enactment in February 2009.

"Besides capacity building, ISAAA *Afri*Center has been a very good source of materials and information on issues of crop biotech, particularly the videos on specific crops such as tissue culture banana and cotton, the report on the annual status of commercialized biotech crops, and the website. These have been very useful sources of background information for my articles. I have used these materials to gain deeper knowledge of biotechnology. These have helped me to write my stories using most up-to-date information and to challenge some misconceptions about the technology. I am also a regular attendant to the monthly Open Forum on Agricultural Biotechnology (OFAB) meetings in Nairobi, which have been good sources for my stories."

Indeed, Wandera has never looked back since these trainings and exposure visits. He has been very consistent in his coverage of biotechnology issues. "Besides general coverage, I convinced the *Standard* management to create a special page on biotechnology which turned out to be my column. Known as *BioWatch*, the column ran every Sunday in the *Bizbytes*, a special pullout in the *Sunday Standard*. I also managed to convince the management of the *Standard* on the need for a special pullout on science and technology, which came to be known as *Panorama* that runs every Thursday."

Feedback on Biotech Articles

Wandera's works have not gone unnoticed. "I get a lot of feedback from my stories/writings. There are those who confessed to having developed an addiction and used to buy the Sunday paper only because of the biotechnology column *BioWatch.* Many of my readers would call and write to either complement or differ on some of the analytical pieces."

"I have also been invited to speak on my experiences on reporting agricultural biotechnology at various conferences in recognition of my work - the most recent being at the just concluded *Insect Resistance Maize for Africa, End of Phase II Project* Workshop organized by the International Centre for Maize and Wheat Research (CIMMYT) and the Kenya Agricultural Research Institute (KARI) in Nairobi.

But possibly the greatest feedback (and reward) for Wandera's work was the continental prize on agricultural reporting under the *Outstanding*

BIOTECHNOLOGYWATCH

BIZBYTES

Long road to bill on biosafety

Wandera's Bizbytes article in the Sunday Standard.

Journalism in Agricultural Reporting in Africa category for a biotechnology story he published in the *Standard*.

Wandera received the outstanding print award for his article, "Endangered Species", published on September 2, 2007 in the *BioWatch* column of the Standard newspaper. In this story, Wandera effectively highlighted the plight of diminishing indigenous livestock breeds in Kenya and neighboring countries, and advocated strongly for the conservation of their genetic diversity through research, local breeding programs and policy interventions. 'Endangered Species' is a good agriculture research story and the journalist has done proper justice to a difficult theme," said the judges.

"I get a lot of feedback from my stories/writings. There are those who confessed to having developed addiction and used to buy the Standard paper only because of the biotechnology column BioWatch."

The CGIAR-FARA 2008 Award for Excellence in Agricultural Science Journalism in Africa attracted 49 print and broadcast entries on issues affecting Africa's key crops (banana, cassava, maize, rice) and livestock, namely, biofuels, climate change, the role of biotechnology, food safety, access to fertilizers, pest management and efforts to control noxious weeds such as striga.

Commenting on the award-winning pieces, Francois Stepman, Communications Specialist for the Accra-based Forum for Agricultural Research in Africa (FARA) had this to say *"In this day of information overload, journalists have to be concise, accurate and relevant. They additionally have to present agricultural information attractively and innovatively. Their choice of words and images sometimes has more impact than loads of scientific evidence. "We truly laud the efforts of journalists to inform and educate the public about the importance of issues affecting agriculture in Africa, and solutions offered by research."*

Despite the apparent low coverage of agricultural biotechnology currently being experienced due to heightened political intrigues, Wandera believes this is bound to change for the better especially with the now enacted Biosafety Law and as the technology eventually moves from the laboratory to the farms and to the Kenyan markets. ❑

Hoang Minh Nhat

Using Radio to Disseminate Agri-biotech Information

By Hien Le

Radio the Voice of Vietnam (VOV) is the national broadcasting media station of the Vietnamese Party. More Vietnamese listen to the radio than watch television or read newspapers. Hence, radio is an important communication channel in a country where 70 percent of the population still resides in the countryside. VOV is estimated to reach more than 90 percent of all households.

VOV is keen on broadcasting news about science and technology (S&T) knowing that S&T is a driving force for economic development and a means to help Vietnam develop and integrate with the global economy. The broadcasting time and duration for S & T is equal to that of other programs devoted to political, economical and social concerns.

Mrs. Hoang Minh Nhat is a 54-year old reporter and editor of the Science and Technology Department, VOV1, Radio the Voice of Vietnam, where she has been working for the last 25 years. Prior to her current stint, Nhat was a biology teacher in secondary school for seven years. She graduated from the Agriculture Technology and Biology Department, Hanoi Teaching University in 1976.

Nhat finds translated publications such as Pocket Ks helpful in her job.

Nhat takes the lead in broadcasting 3-4 programs of S&T (25 minutes each) and 2 programs on innovation in S & T. Her programs cover new technology in construction, health, new materials, agriculture, and biotechnology.

Nhat believes that "S & T is a priority in economic development in Vietnam, especially for a knowledge-based economy." She says that "genetically modified (GM) crops are a result of advanced and modern technology. They are high yielding, resistant to certain pests and diseases, and are suitable for use in Vietnam's agricultural environment. However, it's a new technology, hence we broadcast not only to promote its adoption but to tackle issues related to management and regulation."

Covering agricultural biotechnology in Vietnam is not common and is often discussed mostly in academic journals. Inadequate knowledge in this field as well as its difficulty in accessing information are aggravated by the fact that GM crops are not yet commercialized in Vietnam.

Nhat shares her thoughts in broadcasting about biotechnology. It entails transforming science news into an easy to understand format for readers. This is often a difficult task as it involves translating a lot of terminology and making an attractive story. The writer is constrained by his knowledge and understanding of issues, and cannot depend much on the given copy.

Aside from the language, listeners also pay attention to arguments and opinions about S & T so they can make informed decisions. Her stories on S&T are highly appreciated by the science community as being from a trustworthy and reliable source.

Updates Through Workshops

Nhat participated in some activities organized by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) in Vietnam such as media briefings on the status of global biotech/GM crops in 2007 and 2008, and a workshop on the safety assessment of GM crops. She says that these opportunities help her to better understand GM crops, the global status of biotech crops, benefits that the technology can bring, and issues when adopting GM crops.

She has covered stories on such topics as GM food safety, global status of GM crops and its development in Vietnam, and delayed ripening technology. "The role of Agbiotech Vietnam is important in providing news to VOV readers, especially to farmers, scientists, policy makers, students, and the public in general. It is contributing to raising GM crops awareness and development in the country by giving us the latest updates on the technology through the translation of key publications into Vietnamese."

"For a Vietnamese reporter to write an accurate science story, translation of news from English into Vietnamese is a service that must be readily available. Agricultural biotech is a new technology and the information in the Crop Biotech Update targets a specific reader group with enough information to understand. Other translated publications, such as Pocket Ks, the book on *Agbiotech in Vietnam*, and the report on the global status of GM crops are proving to be very useful. Workshops or field visits are also ways to help raise awareness on crop biotechnology. The best and attractive story is one where a reporter actually experiences witnessing facts become reality," says Nhat. ❑

Ashok B. Sharma

Multi-Awarded Journalist Writes About Biotech

By Bhagirath Choudhary and Kadambini Gaur

Mr. Ashok B. Sharma is a veteran and acclaimed agricultural journalist from India. He has been in the writing profession since 1974 and has worked for many years in the newspaper *Financial Express* based at New Delhi. Mr. Sharma worked for 22 newspapers in and outside Delhi and has extensive field reporting experience from Nagpur Ahmedabad, Bhopal and Guwahati.

As an agricultural editor at *Financial Express*, he wrote a weekly column on farm economy known as *Farm Front*. During his career, he won various national and international awards in journalism including the Food and Agriculture Organization (FAO) award for excellence in agricultural journalism, Prem Bhatia Memorial Award for excellence in environmental journalism, and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) award for excellence in science and agriculture journalism. He has extensively travelled to several countries in five continents: Asia, Europe, North America, Latin America and Africa.

Ashok B. Sharma (right) receives ICRISAT award for excellence in science and agriculture journalism.

Mr. Sharma's interest in development issues and concerns for the upliftment of the poor drove him to the profession of journalism. "Science communication should be based on complete unbiased writing weighing the benefits and adverse impact of any technology," he says. Topics for his writing range from various disciplines of agricultural sciences to issues related to commodity market, Intellectual Property Rights (IPRs), World Trade Organization's (WTO) agreement of agriculture, technical barrier to trade and sanitary and phyto-sanitary agreements. Mr. Sharma was instrumental in defending the concerns of developing countries during WTO's Doha Round, saying "I am open to all views as far as policy and support for science and technology articles are concerned."

"Genetically modified crops as part of agricultural biotech is still under debate globally. Pros and cons on the issues related to health and environmental concerns are being raised by critics. In view of these issues, the media should be vigilant in all aspects," he avers. Mr. Sharma has extensively reported these issues in popular media and has never encountered any problems in getting these issues published.

The veteran writer has had extensive interaction with the International Service for the Acquisition of Agri-biotech Applications (ISAAA) over the last nine years particularly with Dr. Clive James on biotech issues and the global status of commercialized biotech/GM crops report. He has been the first to report every year on ISAAA's annual brief on the global status of commercialized biotech/GM crops. "ISAAA has put in its best effort in promoting genetically modified crops in agriculture. But the organization should do an in-depth analysis of

Bt brinjal can resist attack of FSB larvae, safe for consumption: study

Ashok B Sharma
New Delhi, Mar 1

A study conducted by the global pro-GMO lobby, ISAAA, has claimed that Bt brinjal can resist the attacks of the common enemy fruit shoot borer (FSB) larvae and also be safe for human consumption.

The study, co-authored by Bhagirath Choudhary and Kadambini Gaur, said that Bt brinjal hybrids containing cry 1 Ac gene express Bt protein in all parts of the plant throughout its life cycle. To get activated and exhibit insecticidal property, Bt protein must be ingested by FSB.

When FSB larvae feed on Bt brinjal plants, they ingest Bt protein along with plant tissue. In insect gut, it is solubilised and activated by gut proteases generating a toxic fragment. The activated insecticidal protein then binds to two different receptors in a sequential manner.

Quoting extracts from a paper in the American Academy of Microbiology, the study said that the first contact of the insecticidal protein is with the cadherin receptor, triggering the formation of oligomer structure. The oligomer then has increased affinity to a second receptor, amino-peptidase-N (APN).

The APN facilitates insertion of the oligomer into membrane causing ion pores. These events disrupt digestive processes such as loss of transmembrane potential, cell lysis, leakage of the mid-gut contents and paralysis that in turn cause the death of FSB.

The 102-page study entitled - The Development and Regulation of Bt brinjal in India - however, said that Bt brinjal does not harm or pose any threat to higher order organisms and non-target organisms, as they lack specific receptors and conditions for activation of Bt protein in their gut and hence is safe for human consumption.

Apart from Cry 1 Ac gene, Bt brinjal contains a selectable marker, nptII gene, which encodes enzyme neomycin phosphotransferase, Cauliflower Mosaic Virus 35S promoter and aad gene, which encodes for bacterial selectable marker enzyme 3n(9)-0- aminoglycoside adenyl transferase.

Addressing the concern of a possible genetic contamination of non-Bt brinjal, the study said that the maximum distance travelled by pollen could be between 15 to 20 metres and outcrossing could vary from 1.46% to 2.7%.

The study attempted to resolve the issue of the centre of origin of the crop by saying that reports suggested Central and South America as the centre of origin of the species of genus Solanum to which potato and brinjal belong.

It further said that brinjal probably originated from African wild species S incanum, S melongena and was first domesticated in South-East China and taken to the Mediterranean region during Arab conquest in the 7th century. There are studies, which also report that brinjal originated in the Indo-Burma region.

The ISAAA study however noted that as brinjal appears in ancient Indian literature, India may be a secondary centre of diversity, while Africa may be the primary centre. Noted scientist Vavilov, however, regarded India as the original home of brinjal.

The ISAAA study lauded the regulatory system in India and hoped that India would be able to give to the world the first Bt brinjal.

Resistant genetics

- Bt brinjal doesn't harm any higher order and non-target organisms, as they lack specific receptors and conditions for activation of Bt protein in their gut and hence is safe for human consumption
- The study notes that India may be a secondary centre of diversity, while Africa may be the primary centre

Mr. Sharma's Bt brinjal article published in the Financial Express.

concerns on health and environmental issues being raised by the critics of the technology."

Mr. Sharma feels that ISAAA has developed unique communication channels with the media for which it is getting its extensive coverage. Since 2004, he has been involved in various activities of ISAAA including the *International Conference on Agricultural Biotechnology: Ushering in the Second Green Revolution* organized jointly with the Federation of Indian Chambers of Commerce and Industry and M.S. Swaminathan Research Foundation in August 2004 where Mr. Sharma delivered a speech on *Public Acceptance and Consumer Perspective of Genetically Modified Crops*. Later he actively participated in media workshops for training media persons in their reportage on modern biotechnology organized by ICRISAT in collaboration with the Asian Media Information and Communication Center-India, ISAAA and the United Nations Educational, Scientific and Cultural Organization.

The first media workshop where Mr. Sharma was a participant was held in October 2004 in Patancheru, India. It was attended by senior journalists from India, Sri Lanka, Bangladesh and Nepal. Resource persons were biotechnology experts from ICRISAT and communication practitioners from the Philippines and India. Participants wrote articles based on the inputs of resource persons and these were published in their respective newspapers. This workshop was the start of a series of media workshops that targeted writers from India, Bangladesh, and eventually to Niger, Africa where journalists from Burkina Faso, Ivory Coast, Mali and Senegal participated. Knowledge and wisdom gained from the workshops inspired the sourcebook for journalists entitled *Genes are Gems: Reporting Agri-biotechnology*. ❑

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