



Mapping the Impact of Science Journalism

A Case study: SciDev.Net

Yulye Jessica Romo Ramos, Monitoring & Evaluation Coordinator at SciDev.Net

OUR LEARNING SERIES

About SciDev.Net

SciDev.Net is committed to bringing science and global development together through news and analysis.

Our mission is to help individuals and organisations apply evidence and innovations from science and technology to decision making in order to have a positive impact on equitable and sustainable development and poverty reduction.

The SciDev.Net website [www.scidev.net] is the world's leading source of reliable and authoritative news, views and analysis on information about science and technology for global development.

Our main office is based in London but we have 6 regional news desks based in Sub-Saharan Africa, South Asia, Latin America & the Caribbean, South-East Asia & Pacific, Middle-East & North Africa and West Africa. Between us we manage a worldwide network of registered users, advisors, consultants and freelance journalists, who drive our activities and vision.

For more information please consult our website: www.scidev.net

For free email updates visit: www.scidev.net/sign-up

Contact Details

For queries about this paper please contact SciDev.Net's Monitoring and Evaluation Coordinator:

Yulye Jessica Romo Ramos

9-11 Richmond Buildings | London W1D 3HF | UK

+44 (0) 20 7292 9910

ourlearning@scidev.net

www.scidev.net

Join us on Facebook: www.facebook.com/scidevnet

Follow us on Twitter: [@SciDevNet](https://twitter.com/SciDevNet)

First published by SciDev.Net in the UK in 2013

Copyright © SciDev.Net

SciDev.Net material is available to republish on condition that the original author and SciDev.Net are credited.

ISBN 978-1-909528-07-9

Printed and bound by Trident Printers, UK

Cover design by www.chichestergraphicarts.com

Photo Credit: Flickr/Albert Gonzalez Farran, UNAMID



Bringing science and global development together
through news and analysis

SciDev.Net Learning Series

Mapping the Impact of Science Journalism

A Case study: SciDev.Net

Yulye Jessica Romo Ramos,
Monitoring & Evaluation Coordinator at SciDev.Net

Acknowledgements

A special thanks to all the readers, freelancers and opinion writers who participated in the research projects described here. Their interest and contributions were key to making possible this participatory research project.

Table of Contents

Acknowledgements	ii
Summary	1
Chapter 1: Methodology and data sets	4
1.1 ‘Tell us your story’ campaign.....	5
1.2 Impact of SciDev.Net news articles.....	6
1.3 Impact of SciDev.Net opinion pieces	7
1.4 Methodological Limitations	8
Chapter 2: Reach and engagement of SciDev.Net content	9
2.1 Engagement via SciDev.Net website	10
2.1.1 Reach and engagement beyond our website.....	13
Chapter 3: Research uptake in practice	16
3.1 Characteristics that help uptake.....	17
3.2 Types of research uptake	18
3.2.1 Use of S&T for knowledge building and policymaking.....	19
3.2.2 Use of S&T as a source of new story ideas and awareness raising	20
3.2.3 Use of S&T as reference and for teaching and sharing with others	22
Chapter 4: Long-term impact of research uptake	23
4.1 Increased interest in development, science communication and new methods.....	25
4.2 Expansion of networking and improved professional relationships	25
4.3 Changed attitudes towards certain stakeholders.....	27
4.4 Impact in the policy, development practice and/or research spheres	27
Annex 1 – List of opinion articles analysed	34
Annex 2 – Impact of SciDev.Net opinion articles	39

Table of Figures

Figure 1: Usage of SciDev.Net content	18
Figure 2: Longer-term impacts resulting from the use of SciDev.Net content.....	24

Table of Boxes

Box 1: other organisations and countries leaving comments on opinion articles....	12
Box 2: Other cases showing the reach of opinion articles.....	21

Summary

This report combines qualitative and statistical data from three research projects. The projects focus on the use and impact of SciDev.Net material as reported by a self-selected sample of readers, freelance reporters and contributors of opinion pieces. The response has been overwhelmingly positive but the analysis focuses on mapping and categorising the evidence submitted on types of research uptake and impact rather than on quantifying the estimated impact of all SciDev.Net content.

The first chapter presents details of each research project, the methodology used and key information about each data set, the key point being that the majority of readers and freelancers/opinion writers come from or are based in the developing world/global South — consistent with SciDev.Net's mission and target audiences.

Chapter two presents evidence on the reach and engagement of SciDev.Net material via our website and beyond. This section is mostly based on the in-depth research project focusing on opinion pieces.

Key lessons from this chapter relate to the importance of facilitating engagement online and via media outlets like SciDev.Net's, and making sure contributions are moderated in order to ensure high quality discussions. This, in turn, has proved to expand discussions beyond the ideas presented in the original articles — and has also reached beyond the academic and research sector¹ to a wide range of specialist audiences in the policy and development sphere from both the global North and South.

Stories of reach submitted by opinion contributors have shown that having an article published on our website provide authors with a platform for outreach and engagement with other outlets and stakeholders. This could be seen as a successful strategy to raise both the profile of authors, and their research/ideas in policy and development arenas around the world — with the caveat that the publishing outlet should enjoy a certain level of credibility and wide readership in order to contribute to the overall success.

Most of the studied articles are republished or linked to by other media outlets and online platforms. The potential audience reach is then multiplied. We also found evidence of engagement (discussion and comments) within those platforms. This means that it is worth investigating the impact resulting from republication and discussions held on other platforms, to ensure that analysis does not underestimate the real impact of knowledge brokering and science journalism specifically.

¹ From now on we will refer to the academic and research sector as the research sector only.

The third chapter analyses the motivations for the engagement and use of research. The chapter starts with a section reaffirming the characteristics that sources and scientific information should have in order to facilitate uptake. To summarise, readers need to have access to sources that are trustworthy and authoritative, as well as being able to find in them information that helps them make use of research for policy and development purposes, such as the socioeconomic analysis of research findings.

We found that the majority of readers participating in our survey (over 80%) regularly use SciDev.Net material for personal knowledge building. This was followed by around 70% who regularly use the material to aid understanding of different contexts in the developing world and for topics outside their area of expertise. Immediate outcomes of the publication of articles in the survey are reported to include republication of our articles in other outlets and new articles inspired by our content, policy changes, shifts in discourse, profile building as well as creation of partnerships or projects.

Chapter four presents long-term impacts resulting from the Usage of SciDev.Net content as reported by readers, with around 80% of those participating in the survey reporting that we have increased their interest in development issues or encouraged them to get involved in this areas; helped them frame or redefine ideas, projects, programmes and enhanced their professional network. Other types of impact relate to SciDev.Net motivating readers to get involved in evidence-based activities for development and policymaking, and changing attitudes towards certain stakeholders.

This chapter also presents a detailed account of cases where a news or opinion piece creates impact in the policy, academic or development sphere as reported by the writer. Based on the evidence, it would appear as if the profile of the opinion author goes a long way towards explaining the success of some of the stories presented in this report. Therefore, from an editorial perspective, media and specialist communication organisations should strategically engage with potential contributors that might already have a high profile within their areas of specialisation/country as a way to ensure a certain level of reach and impact.

The ability of the author to engage with other stakeholders, especially those outside the author's sector or area of specialisation, is also a key contributor of impact. Therefore knowledge brokers, such as media organisations, might see some value in supporting the development of key capacities related to science communication as part of their engagement with writers. In that sense, it is important to create flexible editorial workflows that allow for the inclusion of both experienced and less experienced writers whose mother tongue might or might not be English.

In spite of methodological limitations in the sampling, the report indicates that SciDev.Net material is actively contributing to the practical knowledge of specialists in a range of sectors. We encourage others to also trial innovative ways of monitoring and evaluating science journalism/knowledge brokering in order to better understand and facilitate research uptake, as well as longer-term impacts.

Chapter 1: Methodology and data sets

Over the last two years, SciDev.Net has intensified and formalised its monitoring and evaluation (M&E) strategy covering all areas of work — starting at the activity (input) level and continuing to outcomes (expected change) and impact level (typically long-term results). This report focuses on findings from the following research projects related to outcomes and impact:

- 'Tell Us your story' campaign: this studied attributes that help uptake, as well as the outcomes and impact of SciDev.Net content as perceived by a sample of our readers
- The impact of news articles as reported by participating SciDev.Net freelancers
- The tracking of the perceived impact of opinion articles through the contributors

More details regarding each of the above projects follows below.

1.1 'Tell us your story' campaign

The 'Tell us your story' campaign is an annual survey open to all SciDev.Net readers on a self-selected basis. The survey is hosted on the SurveyMonkey website and invitations to participate are promoted on the SciDev.Net website and in weekly email alerts. There is no attempt to target readers with any specific interests or profile.

The first survey was conducted in English in 2010 and revolved around two open-ended questions inviting stories about the use of SciDev.Net content and the impact resulting from such use. We received over 100 submissions and much was learnt in terms of use and impact.

This learning led to the design of closed questions in subsequent surveys in order to allow for faster and more systematic longitudinal studies. It also provided a baseline for the attributes readers identified as key for research uptake. The Global Review² of 2012, a series of worldwide research projects that informed the current SciDev.Net strategic model and theory of change, drew to a certain extent on the design and learning of the 2010 survey.

The latest campaign ran again at the beginning of 2013 to solicit impact stories covering 2012, this time in both English and Spanish, and generated around 500 responses. After cleaning of data, 456 responses were used from readers based in

² SciDev.Net Global Review 2012 (Romo, 2012). Available at: <http://www.scidev.net/global/evaluation/learning-series/scidev-net-global-review-2012.html>

84 countries — the majority from the global South (77%) and from male respondents (65%). The geographical distribution of responses matches the Global Review sample distribution to a certain extent, with the exception that the latter collected over 90 per cent of responses from the global South. (It is also worth noting that the Global Review survey was administered to a purposive sample with the help of field-contractors, unlike the online open call for participants that characterised the 'Tell us your story' campaign.)

In both cases, there are respondents from the following sectors: media; private; third and public; and the research community. Analysis of responses was, in some cases, compared between groups and there is overrepresentation (52%) from the research sector in both data sets and of people aged between 45 and 64 years (48%).

1.2 Impact of SciDev.Net news articles

Stories of impact by freelance journalists writing for SciDev.Net are collected annually. A survey is hosted on SurveyMonkey. Email invitations for participation were sent to all freelancers who have written news articles over the year (around 75). The majority are based in the global South.

Over the last two years, SciDev.Net has published around 1,800 news stories — of which 32% covered Latin America and the Caribbean (LAC), 25% Sub-Saharan Africa (SSA), 17% South Asia (SA), 11% South East Asia and the Pacific (SEAP), 10% the Middle East and North Africa (MENA), and 5% China.

The first survey went out in 2012 — covering the impact of news published in 2011. Thirty-three freelancers participated in this survey and a total of 31 responses were used after cleaning of data. If we take into account those who exited the survey when asked about impact and those who answered "no" or "don't know", the proportion of responses is 64%. However, of those who did not respond in the affirmative when asked directly about impact, 22% provided examples of impact in response to other questions. Therefore, the adjusted figure for those not reporting impact is only 42%.

In 2013, twenty-five freelancers participated in this survey – 23 were different from those participating in 2012. If we take into account those who exited the survey when asked about impact and those who answered "no" or "don't know", the proportion of responses is 44%.

The analysis presented in this document combines the two data sets (for stories published in 2011 and 2012), which creates a new total of 56 responses (54 different writers). These writers submitted a total of 47 news articles as having had some impact related to republication in other outlets (largely online but also in

traditional channels) as well as impact in the research or development policy arenas. The average proportion of journalists participating in the survey who reported some sort of impact over the last two years is 57% — in the majority of cases, most respondents were also men (approximately 57%), although in the first year those reporting impact were predominantly women (56%).

1.3 Impact of SciDev.Net opinion pieces

On average, SciDev.Net publishes 90 original opinions and columns a year, of which the majority (around 70% on average for the last three years) are written by contributors from or based in a developing country. Of those, we only sought to track the impact of articles not written by our regular columnists — a total of 51 opinion pieces written from late September 2011 to the end of August 2012.

Writers were made aware of this research effort as part of the lead up to the publication of their article — included details of the project in the editorial guidelines, which allowed contributors to opt-out. Each writer received an email one week, one month, three months and six months after publication of their article. The email used was a template with questions probing perceptions of any impact at the policy and research level, as well as tracking areas related to networking and reach.

It is important to note that none of the writers opted out at the beginning, which could be seen as valuing in principle the goal of this research project. Around 29% of authors did not participate and we received no replies to the email reminders. This effectively meant that our sample size consisted of 36 opinion pieces with 94% reporting impact in any of the aforementioned areas of study. The following sections will cover insights related to our sample size in more detail.

All articles were originally written in English but SciDev.Net also translated and published some of them into the following languages: French (37%), Spanish (33%) and Chinese (30%). The majority covered topics related to science innovation and policy (34%). The regional coverage of opinion pieces is balanced across LAC, China, SA, SEAP, MENA (around 16% each), with a slightly higher proportion for SSA (21%).

Of the total of 36 articles analysed in this document, some had more than one writer. Therefore we had a total of 43 writers — 77% male and 23% female, with the majority (63%) being from or based in the global South. The majority (65%) worked for the research sector, followed by policymakers (21%), people working for NGOs (9%) and science communicators (5%). It is worth noting that many of the authors have recognised profiles in their field of expertise (for details, see annex 1).

1.4 Methodological Limitations

The samples of all the above described projects are voluntary and there was no control group. This means that respondents must feel sufficiently strongly about SciDev.Net to participate in the study. Given that the responses have been overwhelmingly positive, we can reasonably assume that the sample is determined largely by individuals who are supportive of the organisation's mission and work. Even the high response rate among the opinion contributors can be understood by the notion that having agreed to write for the site in the first place demonstrates a positive endorsement. In effect, the methodologies of the 'Tell us your story' campaign and the two tracking projects are not designed to systematically explore negative responses to SciDev.Net content.

As a result, the studies do not provide a comprehensive and objective analysis of the impact of all SciDev.Net content. Instead, it explores the ways in which the site's content engenders a positive response in readers and contributors. This is a valuable contribution to understanding how science journalism can enhance its relevance.

The report covers three dimensions of impact. The first relates to engagement with the content on the site and through other media; the second covers reported use of the content; and finally the report explores long-term outcomes across the various sectors where SciDev.Net content is reported to have made a contribution.

Chapter 2: Reach and engagement of SciDev.Net content

2.1 Engagement via SciDev.Net website

The report identified three dimensions of impact for online science journalism. This chapter covers the first: engagement with SciDev.Net content on the site and through other media and information networks. The following sections therefore attempt to describe the ways in which this engagement has been reported as affecting behaviour and attitudes.

Around 64% of all opinion articles received comments, some receiving as many as nine. Most of these comments were submitted during the first week after publication (61%). Nearly 28% received further comments from the second to the fourth week after publication, and 3% and 6% received more comments three and six months after publication respectively. The vast majority of comments were in English with a small minority of users leaving a comment in other languages. It is important to note that this facility is moderated in order to ensure quality, deleting posting questions or comments not related to the article, for example. By comparison, not all news articles received comments, although the few that did received around three on average.

Most comments contained positive feedback such as "great article", but in some cases readers also raised substantive points and considerations, which contributed to the discussion on the subject. An instructive example is an opinion piece by Justin O. Parkhurst: "Support local governance to get research into policy" (22 September 2011), which received nine comments in total (one of those is from the author). The main idea of the article is:

To see the research they fund in action, donors should work with good local governance, not informal networks. (Parkhurst)³

The initial idea was welcomed and extended, starting with a comment left by someone from the Usmanu Danfodiyo University, Sokoto (Nigeria), who welcomed the approach but also suggested that

[It] should be extended to agricultural research and development too. However, local governance would require some re-orientation for it to absorb the philosophy behind development-oriented and demand-driven research. (26 September 2011)

This was followed by another comment by Omar N. from the United Kingdom who first gave an example from Peru where the health ministry has been successful at setting the national health research agenda with the support of donor agencies. He further added:

³ www.scidev.net/en/science-communication/influencing-policymakers/opinions/support-local-governance-to-get-research-into-policy-1.html

But rather than saying that 'all donors' must promote and finance national research agendas, I would say that [it] is key [to] identify what are the 'institutional' spaces that enable the engagement of the research community in policymaking. (27 September 2011)

The discussion continued with Alexander Ademokun, acting head of programme - Evidence Informed Policy Making at the International Network for the Availability of Scientific Publications (INASP, United Kingdom), who added:

This is an issue that is relevant across many research areas. The strengthening of capacity and institutions with a role in providing policy recommendations is very important but should not stop there. The capacity of individual researchers and staff at ministries, governments and policy relevant departments has to be strengthened. (27 September 2011)

At this point, it seemed that the discussion reached a level of agreement covering areas beyond those originally suggested by the author, further emphasised by another comment by Nathan Souza, a scholar from Brazil with a medical background, who agreed with what was discussed so far, and added that:

In this regard, EVIPNet national⁴ (and provincial and local) must be better supported throughout the global South, their activities and outputs should also be evaluated and good practices shared broadly. (27 September, 2011)

This example demonstrates that comments on journalistic content via an online platform can effectively expand discussion, covering areas beyond those originally suggested by the author, reaching beyond the research sector to a wide range of specialist audiences in the policy and development sphere from both the global North and South.

Therefore it is worth investing in platforms that allow space for comments and that are well moderated to ensure a quality exchange between experts on the subject, which in some cases leads to new partnerships and contributes to networking — see chapter 4 for further details.

⁴ Evaluation of the Evidence Informed Policy Networks (EVIPNet)

Box 1: other organisations and countries leaving comments on opinion articles

Other organisations and countries represented by people leaving comments on opinion pieces are:

- Government stakeholders: the government of Kiribati; the Ministry of Agriculture & Livestock (Zambia); and the National Council for Science & Technology (Kenya).
- Academic organisations: Nayudamma Centre for Development Alternatives (India); University of Nairobi (Kenya); University of Dhaka (Bangladesh); Institute of Nuclear Science & Technology (Kenya); University of Lagos (Nigeria); STEM Education Centre (Zambia); Society for Popularization of Science (India); and Zimsec (Zimbabwe).
- Non-governmental organisations: Pilot International (Uganda); The Cambodia Charitable Trust (New Zealand); Medical Aid Films (United Kingdom); Global Health Hub (Us); and Technology for the Poor (USA).
- Private companies: BioControl — research laboratories — (India), and Red Plough International (Thailand), an organisation specialising in communication around development, science and technology with capacity-building services.
- Residents from the global South: Bangladesh, Bolivia, Brazil, China, Egypt, India, Kenya, Nepal, Nigeria, the Philippines, Puerto Rico, South Africa, Thailand, Uganda, Zambia and Zimbabwe.
- Residents from the global North: Australia, Canada, New Zealand, Sweden, Switzerland, United Kingdom and the United States.

2.1.1 Reach and engagement beyond our website

The Value of Content Sharing

It is important to note that republication of our articles in other media outlets also generated comments. For example, an opinion piece written by John A. Akec, "South Sudan must turn its back on elitist education" (1 February 2012) — which generated only one comment on our website — was later republished on the Gurtong⁵ (4 February, 2012) generating an additional 12 comments. Discussions were also held when the author circulated the opinion within a network he is part of called Academic Forum (mailing list), which generated 24 email responses during the first week (from 2-9 February, 2012) from the following stakeholders:

- John A. Akec (author of the opinion article)
- Laura Nyantong — professor of law, Michigan State University
- Dr Charles Bakhiet — former University of Juba academic, now at Sultan Qabus University in Oman, who was also a member of a fact-finding and evaluation committee set up by the South Sudan Ministry of Education
- Professor Aggrey Majok, vice-chancellor, Dr John Garang Memorial University of Science and Technology
- Dr Lam Akol, leader of opposition party, SPLM-Democratic Change, South Sudan
- Dr John Ojur, former University of Juba academic, now lecturing in Malaysian universities
- Dr Odwa Atari, academic and researcher in environmental planning in Canada
- Dr John Gai Yoh, academic and diplomat based in South Africa
- Dr James Ok — United Kingdom, diplomat
- Laila Lokasang, PhD candidate in a South African university
- Jane Aninai, master's student in United States
- Dr Peter Adwok, Minister of Higher Education, South Sudan
- Academics in Sudan, United States, South Africa, Canada, Malaysia, and Oman

According to John A. Akec, the discussion continued and intensified up to three months after the publication of the article — more details on the impact of this particular article can be found in chapter 4.

⁵<http://www.gurtong.net/ECM/Editorial/tabid/124/ctl/ArticleView/mid/519/articleId/6427/categoryId/24/South-Sudan-MUst-Turn-Its-Back-On-Elitist-Education.aspx>

The proportion of SciDev.Net news writers reporting articles that were reprinted by or linked to print publications is 30% (sample size of 47 news articles); those republished by or linked to other online publications is 70%; news appearing or discussed on the radio is 9%, whereas for articles featured on TV, it is 6%.

We can see that most news articles were republished in online outlets, with around 45% shared via Facebook, 40% on Twitter and 28 on other social media channels. On the other hand, all opinion pieces during the period of study were republished by or had a link provided to them in other outlets (the majority of these outlets being online).

Republication exponentially multiplies the total audience reach of our articles. A new tool that tracks the republication of our content in other online outlets has also allowed us to learn that on a monthly basis we have the potential to reach an extra audience of between 20 and 60 million readers via other outlets. Regular takers include *The Guardian*, *Nature*, *AllAfrica.com*, *Humanitarian News* and *Environmental News Network*. We can therefore conclude that it is worth investigating the impact resulting from republication and discussions held on other platforms. Without taking this into account, our analysis would underestimate the real impact of knowledge brokering and science journalism specifically.

There is also value in supporting mechanisms for sharing

Drivers of content sharing

Unsurprisingly, it is common for opinion pieces to be featured on websites of the organisations where the author works; such was the case with the American Association for the Advancement of Science (AAAS) and an article written by its head of directorate for education and human programmes⁶. This has the value of championing the mission of mainstreaming science in development policy and practice.

In many cases, reach depended heavily on the author and their commitment to mobilising their social networks. For example, Daniele Dionisio, head of the research project Geopolitics, Public Health and Access to Medicines (GESPAM), distributed the article to networks that he is a member of, such as the European Parliament Working Group on Innovation, Access to Medicines and Poverty-Related Diseases. Members include high-level policymakers, senior managers from emerging economies' drug companies and executives from organisations such as the World Health Organization (WHO); the Joint United Nations Programme on HIV/AIDS (UNAIDS); the World Intellectual Property Organisation (WIPO); the World Trade Organisation (WTO); UNITAID; Médecins Sans Frontières; Italian

⁶ "Counting on women in development" by Shirley Malcom (13 AugUst 2012).

NGOs; the Global Fund; Knowledge Ecology International; Oxfam; Policy Cures; the International Centre for Trade and Sustainable Development; and the OECD. Dionisio also sent the article to all those participating in the "Transforming & Scaling-up Health Professional Education and Training" meeting (20-22 March 2012) organised by the Pan American Health Organisation, the Regional Office for the Americas of the WHO and CapacityPlus.

Another interesting example was submitted by both the authors of "Africa needs local capacity for innovation research", Bitrina Diyamett and Erika Kraemer-Mbula (14th June 2012) although their stories reflect different pathways to impact. Ms Diyamett reported that while attending a Think Thank Initiative (TTI Exchange 2012) in Cape Town, with 49 policy research organisations, the author realised that some of the participants had read the article. One of the officials advised her to distribute it widely, which the author did believing it will help propagate concepts and raise the writer's organisational profile. When the author was contacted a year later, no concrete impact had resulted from such outreach apart from generating positive feedback.

In contrast, Kraemer-Mbula, was less proactive but found that the article increased her access to certain spheres. She "received numerous emails from members of two STI networks [of which Kraemer-Mbula is an advisory board member]: CAAST-Net (Network for the Coordination and Advancement of Sub-Saharan Africa-EU Science & Technology Cooperation) and ERAfrica (platform for Africa-EU collaboration in the field of science and technology research for innovation and sustainable development)". In addition, Ms Diyamett believes that the article enabled her to be invited to this network, adding: "People read the article and thought I should attend their meeting".

Other networks and organisations reached proactively by other authors are the Science Comms (a network in Costa Rica) and RedPop (Latin America). Some authors also posted their articles on their blogs and on social media.

From the above examples, we can conclude that having an article published on our website served contributors as a platform for outreach and engagement, helping authors increase the awareness and exposure of ideas covered in their articles. This could be seen as a successful strategy to raise both the profile of authors and their research in policy and development arenas around the world — with the caveat that the publishing outlet should enjoy a certain level of credibility and wide readership in order to contribute to the overall success.

Chapter 3: Research uptake in practice

3.1 Characteristics that help uptake

As mentioned in chapter 1 on methodology, based on qualitative responses submitted by readers back in 2010, we identified a series of characteristics or attributes for communication that help research uptake. We used them to design questions for large-scale surveys such as our Global Review⁷. The results from the review served to reinforce the value of these attributes. The audience survey of our 2012 content ("Tell us your story") also explored these attributes further.

A key lesson learned here is the value of identifying characteristics for *all* aspects of the communication function. For example, "trustworthiness" and "authoritativeness" are items that were highly ranked and focus on the type of sources readers are most likely to engage with; whereas attributes for content relate to presenting the social and economic analysis of research results. This means that in order to increase research uptake, readers need to have access to sources that are trustworthy and authoritative, as well as being then able to find through them information that describes the implications of research findings for policy and development purposes.

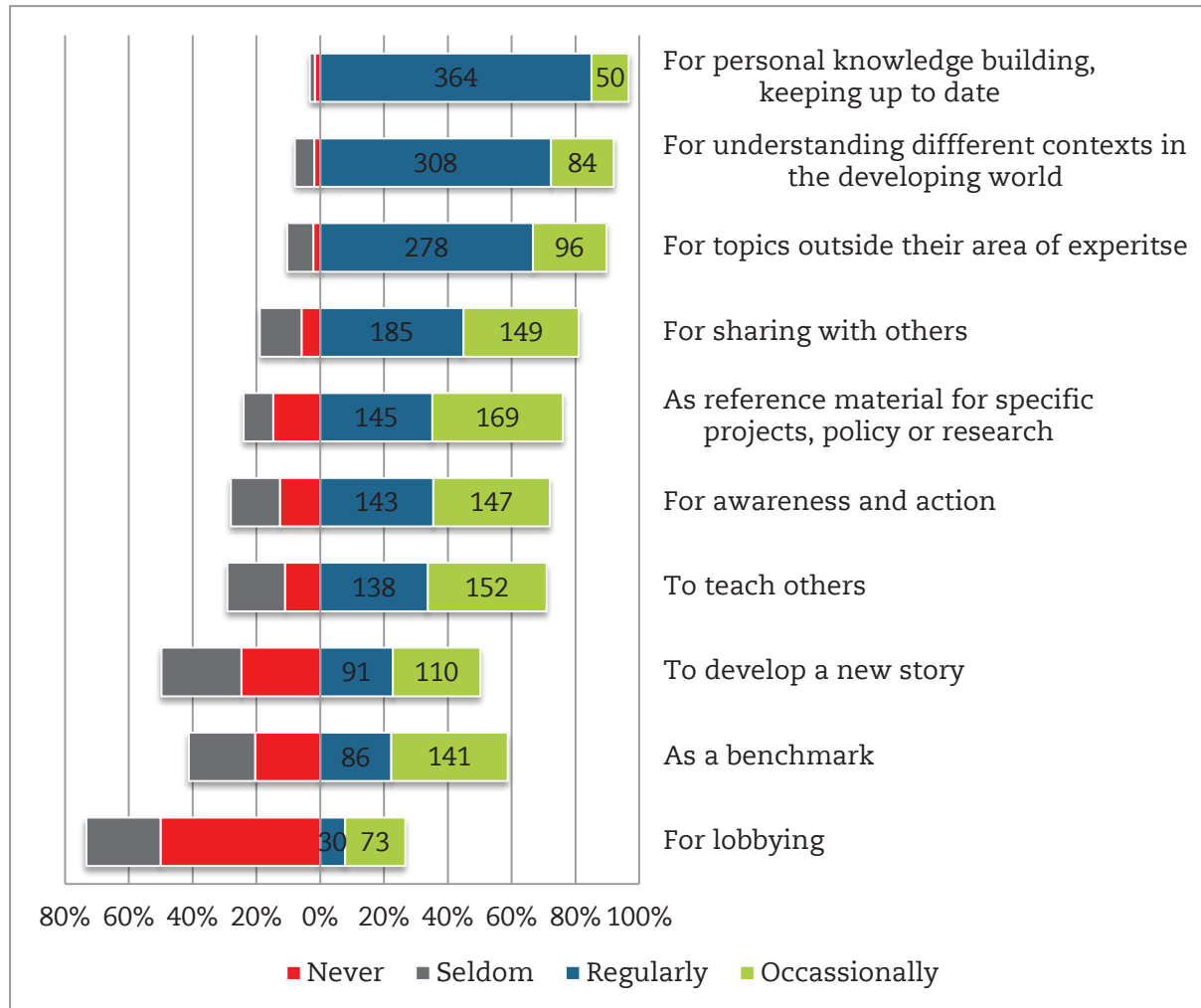
Surveys conducted by SciDev.Net over the last two to three years have asked readers about these issues, finding that in all cases the majority rated us positively. This sets the basis for the following sections in this chapter, which elaborate the types of research uptake as reported by SciDev.Net readers.

⁷ SciDev.Net Global Review 2012 (Romo, 2012).

3.2 Types of research uptake

We asked our readers to tell us the frequency with which they have used SciDev.Net's material in any of the ways below. The responses are as follows:

Figure 1: Usage of SciDev.Net content



Note: graph shows responses ranked by responses to "Regularly". Division of responses to the right of the vertical of the y axis represent positive responses, whereas those on the left represent negative responses; also most negative and most positive responses are presented in opposition to each other, immediately to the right of left of the axis

Media-sector readers seem to use our content more regularly than others for benchmarking (although this difference is not statistically significant). The media sector is the sector with the highest response rate to our survey strongly agreeing that our organisation has helped them frame or redefine ideas, projects and programmes (35%). Media respondents included people working for print, radio and TV outlets as well as online operations such as *Reuters Alertnet*, *CTA-K4D* in the Netherlands and *Red de Comunicaciones Apachita* in Bolivia, to name a few.

The following sections explore the findings of the chart, presenting stories and impact cases submitted by readers and writers.

3.2.1 Use of S&T for knowledge building and policymaking

A high percentage of researchers regularly use SciDev.Net content for topics outside their areas of expertise (68% compared with an average of 60% for all other respondents). Interestingly, those readers working in the public sector have the higher proportion of regular usage of our content for personal knowledge building in areas related to their area of expertise (93% compared to an average of 81% across all other respondents). This group also uses SciDev.Net content more regularly than others for lobbying or policy making purposes.

Respondents from this sector included those working for organisations such as: the National Office for Technology Acquisition and Promotion and the Federal Ministry of Science and Technology in Nigeria; the ministries of agriculture in Ethiopia, Brazil and Chile; the Department of Primary Industries in Australia; the ministries of health in Mexico, Peru and Venezuela; the Bureau of Fisheries and Aquatic Resources in the Philippines; the Ministry of Defence in Slovakia; local-level governments in Peru; and federal level government bodies in Mexico.

Amy Angel, an agricultural economist at the Salvadoran Foundation for Economic and Social Development, believes that:

SciDev.Net is a very effective tool to learn of recent policy developments and research results. I consider it an important resource to keep my knowledge base up to date ... I use examples of best practices in agricultural policy through articles I have read on SciDev.Net.

SciDev.Net readers Miguel Lenaza and Mario Francisco Morote Orellana work for ministries of health in Mexico and Peru respectively and, in both cases, their stories relate to the usage of SciDev.Net as a reference and source when designing, implementing and evaluating policies.

In addition, Carkis L. Madrazo, Jr. PhD – an advisor working for Global Ministries, a faith-based organisation — told SciDev.Net that he uses "some of SciDev.Net's articles as a basis for further dialogues on NGO policy ideas" and that "the NGOs [he] has advised now have their own science-related policies".

Edgardo Rubianes, the ex-president of the National Agency of Investigation and Innovation in Uruguay, told SciDev.Net that he used our content during his former role for analysis and the development of public policies and that our material has allowed him to have a broader and global view of R&D as well as innovation.

It is important to note that our opinion writers also used the pieces they wrote for SciDev.Net as means of lobbying. More case studies of research uptake that had made an impact in the policy or research and/or development sphere are presented in detail in chapter 4.

3.2.2 Use of S&T as a source of new story ideas and awareness raising

Around 69% of media-sector readers regularly use SciDev.Net content as a source of inspiration for the creation of new stories. What is surprising is the proportion of respondents working in the private sector, the NGOs and the research sectors that also use it to generate new ideas (around 20%).

The media sector, however, is the lowest in terms of the proportion who regularly use content for awareness raising and action (only 26%) — compared to NGOs and the private sector whose proportion is 44% and 39% respectively. NGO respondents included those working for organisations such as Save the Children International (Ethiopian programme), the National Council of Women's Organisations (Malaysia), Médecins Sans Frontières (Netherlands), the World Health Organization (Switzerland), CRDF Global (an organisation that promotes peace and prosperity through science collaboration) and the World for World Organization (WFWO in Italy).

Below are a series of submissions by readers demonstrating the use of our content as sources for new story ideas:

- 1) Geoffrey Kamadi, a journalist working for *Reuters Alertnet*, *Spore Magazine*, the *New Agriculturist*, the *Daily Nation* and *The Standard*, based in Kenya, reported that "as a freelance science journalist, I find SciDev.Net quite useful. Its high-quality content not only keeps me thoroughly informed but gives me ideas which I develop into stories for both local and online publications".
- 2) Robert Kahn, a United Kingdom scientific/medial writer working for Kansas State University, United States, and a specialist in the animal-human-environmental interface, told us:

SciDev.Net keeps me informed about what is happening in the developing world, especially new research and policies. This informs my writing consistently, as in recent articles and conference reviews that I have written for the journal *Zoonoses and Public Health* ... SciDev.Net makes sure that my writing is relevant to the developing world, utilising new scientific research in relation to deciding on new policy options.

- 3) Bennen Buma Gana, a journalist currently working for Cameroon Radio and Television, said that after completing a workshop run by SciDev Net in Cameroon in 2005, he was able to write for the site as a freelancer. During his current role, he has "used the information on the site sometimes to help out in the newsroom and to help develop other reports for the radio". Specifically, his media organisation has "used much of the information from SciDev.Net in our association CAMAM — Cameroon Media Against Malaria. Here we have been able to involve the nation in [a] veritable fight against malaria."
- 4) Liliam Lee Hernández, a journalist working for a TV network in Cuba (Sistema Informativo de la Televisión Cubana), said that she uses our content as a reference and source for a section of a weekly news programme that discusses science, technology and environmental issues. She adds that SciDev.Net provides a different focus and coverage of topics that are not otherwise covered in other media outlets with a global reach.

Box 2: Other cases showing the reach of opinion articles

Other cases demonstrating the reach of articles are presented below as submitted by opinion writers:

- Within a month of the publication of John A. Akec's article on 1 February 2012, "South Sudan must turn its back on elitist education", Akec was interviewed by a freelance journalist, Graham Jarvis, working with the United Kingdom-based *Times Higher Education*, about higher education based on views Jarvis read about in online publications — including the SciDev.Net article — resulting in the publication of a new piece called "Architects of a nation have to lay down solid foundations"⁸. Eight months after publication of Akec's article the piece was republished in the *Citizen* newspapers in Khartoum and Juba and *The Guardian*.
- A journalist working for *China Science Daily* interviewed two authors that contributed opinion pieces for our spotlight on Grassroots Innovation: Anil Gupta's "How to protect the inventions of the poor" and Lawrence Gudza's "Successful innovation depends on engaging the grassroots", both published on the 2 May 2012 — which resulted in a new piece on the subject⁹.
- Fundação de Ciência e Tecnologia (CIENTEC), a Brazilian foundation, wrote a local press article based on an opinion by Graham Durant, "Africa needs more 'hands-on' science centres" (3 November, 2012).

⁸ <http://www.timeshighereducation.co.uk/420120.article>

⁹ http://news.sciencenet.cn/dz/dznews_photo.aspx?id=14538

3.2.3 Use of S&T as reference and for teaching and sharing with others

Below are a series of stories submitted by readers demonstrating the use of SciDev.Net content as reference and for teaching and sharing with others:

- 1) Henriette Breunis, a clinical research coordinator at the Princess Margaret Cancer Center in Canada, told us:

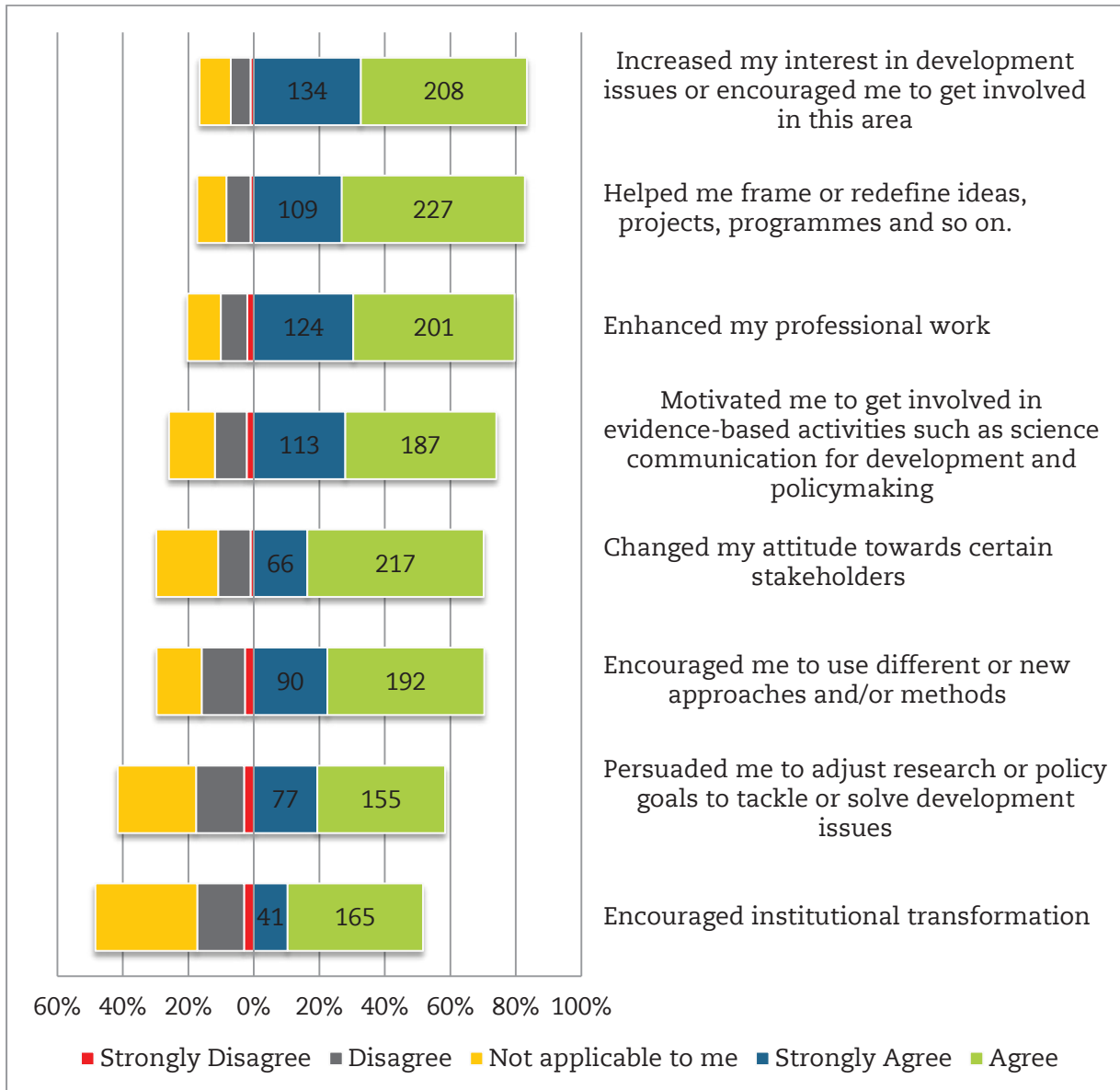
The assistant director of the Himalayan Institute of Canada, who teaches yoga in India, suggested designing a volunteer project to conduct at the Himalayan Institute Hospital Trust (HIHT) in Dehradun, India. Researching ... I found SciDev.Net and read the article "India plans to tighten regulations for clinical trials" (12 September 2012). That inspired me to write a proposal to Dr Saini, the CEO of The Cancer Research Institute of the HIHT, to present workshops in responsible research and good clinical practice. The proposal was gracefully accepted and, in February 2013, five workshops were presented to faculty, PhD students and nursing PhD students of the HIHT ... Attendees of the workshops gained a better understanding of ethical conduct in clinical research and will apply this in future clinical research projects.

- 2) Richard de Grijs — professor of astrophysics and director of the East Asian Office of Astronomy for Development — reported that his organisation "used SciDev.Net to inform our approach in tackling scientific literacy issues; in particular, the feature stories on government policy in this regard were very useful". He added that our "material provided part of the 'evidence' in support of setting up a regional office for the development of our science [in China]".
- 3) Marilyn Pifer, who works for the not-for-profit organisation CRDF Global, told us that "SciDev.Net stories provide useful background information for us as we design development-related projects and point us toward possible partners".
- 4) Rebecca Alderfer, programme officer at the NGO Heifer International, mentioned that her "organisation focuses on socioeconomic and environmental development in the context of hunger and poverty in rural areas of the world". She added: "I share the articles in SciDev.Net that relate to our mission with colleagues in Asia who work directly with the communities we serve".
- 5) K. Madangopal, a curator at the National Council of Science Museums in India, said that he uses SciDev.Net material "as reference for sharing scientific information" and that he uses it when "building new exhibit ideas for the centre".

Chapter 4: Long-term impact of research uptake

We asked readers about longer-term impacts resulting from the use of SciDev.Net content. The table below reflects the analysis of responses:

Figure 2: Longer-term impacts resulting from the use of SciDev.Net content



Note: graph shows responses ranked by cumulative responses to "Strongly agree" and "Agree".

The following sections elaborate on findings, presenting stories and impact cases submitted by readers and writers.

4.1 Increased interest in development, science communication and new methods

Those working in the researcher sector represent the highest proportion of readers who strongly agree that our content has both increased their interest in development issues and persuaded them to change research goals in order to tackle development issues.

Research respondents included a vast range of organisations in up to 64 different countries, specialising in a diverse range of subjects including agriculture, biotechnology, development and S&T studies, economics, forestry, geology, livestock, medicine, natural history and physics. Specific organisations included the World Agroforestry Centre; the International Atomic Energy Agency; the International Institute of Tropical Agriculture; the National Institute for Interdisciplinary Science & Technology (India); the National Centre for Research (Sudan); the Salvadoran Foundation for Economic and Social Development; the Medical Research Council Unit (Gambia); the US Geological Survey; the National Institute for Medical Research (Tanzania); the Global Agricultural Research Partnership (CGIAR); the Newcastle Institute for Research on Sustainability (United Kingdom); as well as many other national universities.

Media respondents were most likely to strongly agree that our content has encouraged them to use new methods or approaches as well as being motivated to get involved in evidence-based activities such as science journalism.

4.2 Expansion of networking and improved professional relationships

The media sector had the highest proportion of readers strongly agreeing that our content has enhanced their networks (52%). For the research sector, Moctar Toure — a soil scientist working at the National Academy of Science and Technology of Senegal — mentioned that he used our content when "developing academic and research networks [and] establishing [a] national scientific journalism group". He added that our content has helped better appreciate partnership opportunities.

In addition, around 46% of all opinion authors reported an impact related to networking or improved professional relationships during the first week after the publication of an article, 31% a month after publication and a further 11% and 23% after three and six months respectively.

Impacts related to networking generally resulted in new projects or discussions that were seen in some cases as "generating opportunities for [SciDev.Net opinion] writers to input into others' projects in the area" (Manuel M. Dayrit). Once again, publishing on a website with some credibility and consolidated reach might be key to the results presented in this document.

In terms of improved professional networking, some opinion authors reported that former colleagues or contacts got in touch again after reading the article they published on SciDev.Net. This was accompanied by good feedback and further discussion. Where the development of entirely new contacts happened, it tends to be — as one of the authors put it — "by [a wide] range of people working in a similar vein [and] who are interested in sharing information in techniques to identify best practices" (John Waugh, 25 September 2012).

New contacts made by opinion writers with NGOs include: the Scientific & Technical Advisory Panel for the Global Environmental Facility; the Bill & Melinda Gates Foundation; Practical Action (particularly among Practical Answers, Practical Action's knowledge services arm); the International Development and Research; and Engineers without Borders.

Within the research sector, new contacts were created with organisations such as the Academy of Sciences for the Developing World; the Belfer Center at Harvard University (United States); Columbia University (United States); Florida University (United States); Peking University in Beijing (China); the Kavli Institute for Astronomy and Astrophysics; the Institute of Physics (United Kingdom); and the Charles Sturt University (Australia).

Networking with policymakers was also reported at all levels from the local to the international sphere, but it was more limited than the number of interactions reported with the research and NGO sectors. There were also a few new contacts made with media outlets as a result of journalists contacting the authors for comments on their articles or planned new articles based on the ideas exposed in the opinion pieces published on our website (details and examples presented in chapter 2).

4.3 Changed attitudes towards certain stakeholders

The highest proportion of respondents strongly agreeing with impact in terms of changed attitudes towards certain stakeholders is the public sector (21%).

One of our readers, Raymond Onyenezi Ogbu, a public relations officer working for the National Office for Technology Acquisition and Promotion in Nigeria, told us:

SciDev.Net has actually made me understand the level of underdevelopment in the African continent ... It has exposed me to the fact that HIV, for instance, is not the end of the life of a victim [and that] people should be able to know their status before it develops to full blown AIDS. This website is wonderful. It has made me not stigmatise HIV patients anymore and also spread the news on how not to contract the virus in my working place.

4.4 Impact in the policy, development practice and/or research spheres

Chapter 3, section '3.2.1 Use of S&T for knowledge building and policymaking', presented some stories submitted by readers that illustrated the usage of SciDev.Net content for policymaking. The first part of this section presents more detailed cases on the impact of news stories as reported by our network of freelancers. The second part presents analysis based on the vast range of information submitted by our opinion writers regarding the impact of our opinion pieces in the policy, development and research arenas.

The reader will find that cases depict one or more items listed in figure 2 above.

A special note on opinion pieces

In the case of opinion pieces, most cases reported impact that overlaps with both the research and policy spheres. However, an initial attempt to analyse these two areas in isolation shows that around 28% of all authors participating in this research project reported an impact in the research sector during the first week, 25% a month after publication of article, 8% three months after publication and 20% after six months or more from the publication date. This type of impact generally relates to engagement with other peers, discussing ideas and new collaboration opportunities as well as attending workshops and giving talks related to the ideas expressed in their opinion pieces. Around 20% reported an impact in the policy arena a week from publication with 25%, 11% and 25% doing so a month, three months and six months or more respectively after publication.

In chapter 2 we pointed out that the reach of SciDev.Net content depended heavily on the author and their commitment to mobilising their social networks; similarly evidence presented in this chapter seems to indicate that the profile of the author goes a long way towards explaining the success of some of the stories. Therefore, from an editorial perspective, media and specialist communication organisations should strategically engage with potential contributors that might already have a high profile within their areas of specialisation or country as a way to ensure a certain level of reach and impact.

In addition, the ability of the author to engage with other stakeholders, especially those outside the author's sector or area of specialisation is also a key contributor to impact. Therefore knowledge brokers, such as media organisations, might see some value in supporting the development of key capacities related to science communication as part of their engagement with writers.

4.4.1 Impact of news

Below are a series of stories that depict the type of impacts that SciDev.Net news articles are making to various policy spheres around the world. The section is not extensive but rather covers the most striking examples:

- 1) One of our Latin-American correspondents, Zoraida Porrillo, interviewed the Peruvian presidential candidates back in 2011¹⁰. According to the author, this news article "was the only one written about this subject and, therefore, it was quoted many times by media and experts, forcing candidates to say that they were really interested in science and technology and thus the issue was put on the agenda". Once Humala was elected, local media based their expectations on SciDev.Net's article and started to demand concrete action plans. Humala only agreed to talk about his science programme with SciDev.Net, arguing that it was the most important media outlet in the field¹¹. According to the author, "this interview has been reprinted in many blogs and is often quoted in S&T forums. It has become a reference [of] what the new government has promised ... in this field."

¹⁰ [Perú: poca mención a CyT entre candidatos presidenciales](#) (Porrillo, Z., 7 April 2011)

¹¹ [Peru's new president makes ambitious plans for science](#) (Portillo, Z., 12 July 2011)

- 2) The article "Drug regulation follows heart patient deaths" was written by Shahzada Irfan Ahmed and published on 12 March 2012. According to the author, "the article was carried by local papers such as *Dawn* and also quoted in discussions held between stakeholders. The participants including pharmaceutical companies' owners, and health officials took notice of the suggestions given in the write-up. A central Drug Regulatory Authority, which was absent at the time of writing this article, was formed later on".
- 3) An African freelancer, Rivonala Razafison, reported that shortly after his news article Madagascar's locust swarms was published on our website¹² an international call was launched to help the government fight locust swarms in the country.
- 4) According to Mellie Samson Jr, writer of "Deep Sea Mining — A Dangerous Experiment" (12 July 2012):

The article was part of the drive to gain the attention of the wider community in Papua New Guinea (PNG) and the Pacific to lobby against deep sea mining (DSM) in PNG and the Pacific. The NGOs that coordinated efforts to voice the opinions of the indigenous peoples who would be directly impacted by DMS were successful in their efforts. The NGOs collected 24,000 signatures of support against DSM and also lobbied for a moratorium against DSM during the meeting of Pacific island leaders in the Cook Islands in 2012. The PNG government then made a decision to not progress with the DSM venture as it was unclear what impacts such a new extractive industry would have on the marine ecosystem. The PNG has called upon Nautilus minerals [the developer] to come forward with credible information on how DSM may affect the marine ecosystem as well as its effects on the indigenous peoples' livelihoods, especially those within the impact zones.

- 5) The author of "Zimbabwe backs nanotechnology as route to new drugs" (11 December 2012), Munyaradzi Makoni, told us that the Zimbabwean researchers mentioned in the article were contacted by a "South African nanotechnology researcher at South Africa's Council for Scientific and Industrial Research [to] organise conference meetings to see how they can further cement their relationship".

¹² [Scientists crack locust colour code to predict swarms](#) (13 December 2011).

4.4.2 Impact of opinion pieces

Detailed cases of impact resulting from opinion pieces are described below. Only a few have been included here, whereas the rest can be found in annex 2.

- 1) An article called "China's people need better access to science" by Li Daguang (6 October 2011) "sent shock wave to the researchers and science communicator[s] who work for [the] TV science service", according to the author. The information submitted to us was vast and far reaching — this could be attributed to both the article and the high profile of the author in China. LI Daguang is a professor of science communication at the Graduate University of Chinese Academy of Sciences and director of the China Research Center of the International Center for the Advancement of Scientific Literacy based at the University of Michigan, United States.

Within the first week of publication, Daguang reported that people working for the science service branch at China Central Television (CCTV), as well as those in local government in charge of science communication at Shanghai, Beijing, and Tianjin contacted him to request detailed data on the surveys he had conducted with the goal of informing the reform of science communication at national level. A month later, the Science Communication Office of the Chinese Academy of Sciences (CAS) held meetings on how to change the science research institute's relations with media, especially TV Stations "trying to reinforce its ability in science communication", says Mr Daguang. He adds that CAS "has been working on building up an effective 'system' to encourage scientists here to communicate what they do at the labs to the public in terms of the evaluation of achievements of their research". The author participated in all the meetings and heard scientists talk about some of the concepts present in his opinion article and the possibilities for change. He also attended meetings at the Institute of Mechanics and Institute of Geographies at CAS regarding the design of strategies for the effective communication to the public.

The above seems to indicate that the publication of this opinion piece helped or coincided with both a drive from CAS to boost communication and an interest by TV service providers in science and paved the way for more effective science journalism in China, which culminated in a partnership between the Beijing Science Film Factory, CCTV and CAS to produce a series of programmes on science — the first TV programme on stem cell research and its application in treating and curing some diseases has been completed.

Finally, a month after publication, a senior permanent staff member based at Peking University in Beijing — at the Kavli Institute for Astronomy and Astrophysics — and a representative in China for the Institute of Physics

(United Kingdom) contacted Mr Daguang with the desire "to explore ... whether there are mutual interests in pushing for improved scientific literacy at grassroots level in China".

- 2) Within a week of writing "Farmers in Africa should switch to bio pesticides" (12 April 2012), Manuele Tamò — country representative of the International Institute of Tropical Agriculture in Benin — was contacted by the International Development Research Centre through its regional representative in West Africa, inviting him to write a concept note for a project of up to US \$500,000 dollars regarding the implementation of ideas expressed in the article, "particularly concerning the cottage industry production of bio pesticides by groups of women and youth". The author believes that "this is an important achievement which would not have been possible without having published the article". Tamò also received five direct email messages from scientists who want to collaborate with him and from bio pesticide companies who are interested in promoting and selling their products in West Africa. During the same period, the author was contacted by a Kenyan journalist working for *ScienceAfrica* whom requested advice again about a whitefly problem in his country.

Within a month of publication, Tamò reported that he worked with the NGO mentioned in his article, inviting the public and the press to attend an open day in Glazoue (central Benin), where the three enterprises — also referred to in his opinion piece — were present: the neem oil-producing factory, the bio pesticide producing factory and the factory processing the by-products of these two into bio fertilizers. This resulted in the hiring of two interns by the private companies that learned how to produce the virus for bio pesticides. The national TV station filmed the event and produced a 25-minute documentary including various interviews. During the same period, Tamò also mentioned that a group of trainees of the World Foundation of Science Journalists visited his station. The author then had the opportunity to make a presentation on his organisation's activities on bio control and bio pesticides, which was reported back to the press.

- 3) The director of the WHO Department of Human Resources for Health in Geneva, Manuel M. Dayrit, wrote a piece called "Poor countries can keep doctors local" (15 December 2011) and reported that it was "used in Sudan & Nepal as reference for consultations on the topic and it is finding support by [the] World Health Organization (WHO)". The author added that "peers in [the] Philippines have used it to advocate support for the School of Health Sciences", citing as an example George R. Lueddeke — who is a United Kingdom-based specialist in medical education — and his recently published book entitled *Transforming*

Medical Education for the 21st Century, released by Radcliffe Publishing. Chapter 5 of the book is dedicated to the School of Health Sciences in Tacloban, Philippines. Furthermore, Cecil Haverkamp, another colleague of Dayrit working in Botswana, wrote to him "to say that he will use [the] article in his advocacy work with the Ministry of Health (MOH) with regards their policy and programmes for medical education". In a previous section, we also noticed that Dayrit sent the article to all those participating in the "Transforming & Scaling-up Health Professional Education and Training" meeting (20-22 March 2012) organised by the Pan American Health Organisation, Regional Office for the Americas of the WHO and CapacityPlus. There months after publication, he reported that work continues and that the WHO is working on guidelines in this area.

- 4) John A. Akec, author of "South Sudan must turn its back on elitist education" (1 February 2012) — vice chancellor of the University of Northern Bahr El Ghazal and chairman of the Academics and Researcher Forum for Development, a think-tank registered in South Sudan — was contacted a few days after publication of the article by the editor of *Sudan Study* - a journal of Sudan Study Association (United Kingdom), soliciting a paper from him on higher education because someone forwarded the article to the editor. Akec was able to send a paper that drew on the opinion piece as well as other articles subsequently published in the journal in July 2012. This builds on the analysis presented in a previous section of this report about the policy debate ignited when the article was shared via a mailing list to academic and researchers as well as members of civil society organisations — there was also a new article published in *Times Higher Education* based on Akec's piece, see section 2.1.1 "Reach and engagement beyond our website". Unfortunately, six months after publication the author reported that:

The debate about mass higher education intensified and led to hardening of position of the Minister of Higher Education against new universities and has negatively affected their funding. I believe this is a step backward.

The above demonstrates that not all science journalism efforts result in the desired impacts and that careful manoeuvring in the political sphere is still a must.

Also within six months of publication of Akec's article, a British teacher in Tanzania who had read the article in UK-paper *the Guardian* contacted the author enquiring about the possibility of assisting the government of South Sudan in improving the teaching of English in schools. Akec put her in contact with the Ministry of General Education and Guidance. A few months later, the author reported that he was being consulted by the team working to establish

an Episcopal Church of South Sudan University, "as a result perhaps of my [publications] including this [SciDev.Net] article, and through that [I have] been put in touch with the President of the Association of Common Wealth Universities" (2 December 2012). During this last exchange, Akec regarding the impact of his piece, he also mentioned that a former World Bank official and IT expert is collaborating with him to seek funding for IT-enabled health services and that they were writing to potential donors.

- 5) Within three months of the publication of "Successful innovation depends on engaging the grassroots", the author (Lawrence Gudza, 2 May 2012) reported that:

The local Ministry of Information and Communication Technologies has requested to partner with Practical Action [an NGO] to establish a rural community knowledge to enhance knowledge access at a local level and encourage technology innovations. If funded, the project will be implemented in at least 50 rural districts of Zimbabwe. Also Zimbabwe Commercial Farmer's Union (CFU) visited [our] offices to discuss the topic, promising to pilot the mobile media technology if funds allow it.

Within six months of publication the discussion had continued in more detail with Practical Action on the possibility of establishing community technology information centres throughout the country. It was agreed that while content would be sourced from expert communities of practice, local indigenous knowledge would also be harnessed and merged with that of experts. The author sees this as transferring knowledge ownership to the grassroots and contributing towards practice sustainability. Around the same period, Gudza also mentioned that the knowledge services arm of Practical Action had found his article so interesting that it ended up establishing a group on social media website LinkedIn to discuss this and a wider variety of related topics.

In addition to the above, Gudza reported that a writer on Information and Communication Technologies for Development (ICT4D), Stephen Haggard of Tinopolis, found the opinion article of great interest and that the author provided useful information for a case study featuring the work and his organisation were doing, which was due to be published by UNESCO. The author has since made presentations on his views and ideas at The Food and Agricultural Organization (FAO) an agriculture working group comprising all stakeholders working to meet the objective of food security for households and on 29 November 2012, he also made a presentation at the FAO Livestock Working Group comprising all livestock stakeholders.

Annex 1 - List of opinion articles analysed

Author	Profile	Title of Article	Publication Date
Justin O. Parkhurst	Lecturer in health policy at the London School of Hygiene and Tropical Medicine, United Kingdom.	Support local governance to get research into policy	22-Sep-11
Jose Goldemberg	Physicist and professor emeritus of the University of Sao Paulo, Brazil. He has served as Brazil's Secretary of state for science and technology and minister of state for education.	Reality check shows nuclear energy is the wrong path	28-Sep-11
Michael J. Mangala	Lecturer at the Institute of Nuclear Science and Technology at the University of Nairobi, Kenya.	Developing manpower is essential for a nuclear future	28-Sep-11
Li Daguang	Professor of science communication at the Graduate University of Chinese Academy of Sciences and director of the China Research Center of the International Center for the Advancement of Scientific Literacy based at the University of Michigan, United States.	China's people need better access to science	06-Oct-11
Nigel Pitman	Research associate at the Center for Tropical Conservation at Duke University in Durham, North Carolina, United States. He is currently based in Paran, Brazil.	How 'geotags' could track developing world science	12-Oct-11
Graham Durant	Director of Questacon, Australia's National Science and Technology Centre, and a visiting fellow at the Centre for the Public Awareness of Science at the Australian National University.	Africa needs more 'hands-on' science centres	03-Nov-11
Vineeta Dixit	Principal consultant at the e-Governance Division of the Department of Information Technology, Ministry of Communications and IT, India.	Local needs are the future for IT innovations	17-Nov-11

Mapping the Impact of Science Journalism

Author	Profile	Title of Article	Publication Date
Johnson Muchunguzi Ishengoma	Senior lecturer in the School of Education at the University of Dar es Salaam, Tanzania; a member of the Comparative and International Education Society; and a founding member of the African Network for the Internationalisation of Education and the Tanzania US State Alumni Association.	North-South partnerships are not the answer	24-Nov-11
Manuel M. Dayrit	Director of the World Health Organization Department of Human Resources for Health in Geneva, Switzerland. He has served as secretary of health of the Philippines.	Poor countries can keep doctors local	15-Dec-11
Charles Kenny	Senior fellow at the Center for Global Development in Washington DC. He is author of <i>Getting Better: Why Global Development is Succeeding</i> (Basic Books, 2011) and, with Ursula Casabonne <i>The Best Things in Life are Nearly Free: Technology, Knowledge and Global Health</i> (forthcoming in World Development).	Don't wait for wealth - better health needs basic tools	17-Jan-12
John A. Akec	Vice-chancellor of the University of Northern Bahr El Ghazal, and chairman of the Academics and Researcher Forum for Development, a think-tank registered in South Sudan.	South Sudan must turn its back on elitist education	01-Feb-12
John Waugh	Based in Virginia, USA, Waugh is an independent advisor on conservation strategies and planning. His recent work addresses community co-management of conservation areas, participatory mapping, and benefit-sharing arrangements in Africa and Small Island Developing States.	Support community mapping for climate adaptation	08-Feb-12
Johann Bell	Principal fisheries scientist at the Secretariat of the Pacific Community, based in New Caledonia. He is lead editor of the book <i>Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change</i>	Pacific fisheries need tech to track climate impact	15-Feb-12

Mapping the Impact of Science Journalism

Author	Profile	Title of Article	Publication Date
Sidney Thurston and M. Ravichandran	Thurston is an international coordinator at NOAA's Global Ocean-Climate Observations programme in Maryland, United States. Ravichandran is a scientist and head of the Modeling and Observation Group of the Indian National Centre for Ocean Information Services, Ministry of Earth Sciences, India.	Time to stop losing ocean data to vandalism	15-Feb-12
Ben Ponia	Secretary for the Cook Islands Ministry of Marine Resources. He is based on Rarotonga.	Why Pacific islands should take on ocean monitoring	15-Feb-12
Obidimma Ezezika and Justin Mabeya	Ezezika is programme leader and Mabeya is a research consultant — both work at the Sandra Rotman Center of the University Health Network at the University of Toronto, Canada.	How to engage with farmers over GM crops	22-Feb-12
Ndubuisi Ekekwe	Founder of the non-profit African Institution of Technology.	Investment in ICT is no substitute for technology policy	02-Mar-12
Gordon Conway	Professor of international development at the Agriculture for Impact programme at Imperial College London, United Kingdom. He is former president of The Rockefeller Foundation, United States, and the United Kingdom Royal Geographical Society.	How to create resilient agriculture	21-Mar-12
Najin Saab	Secretary-general of AFED and editor-in-chief of <i>Al-Bia Wal-Tanmia</i> (Environment & Development) magazine.	Arab countries need green economies rooted in science	28-Mar-12
Daniele Dionisio	Head of the research project Geopolitics, Public Health and Access to Medicines; a member of the European Parliament Working Group on Innovation, Access to Medicines and Poverty-Related Diseases; and an advisor for the Italian Society for Infectious and Tropical Diseases.	Use new funding models to get drugs to world's poor	05-Apr-12
Manuele Tamò	Country representative of the International Institute of Tropical Agriculture in Benin.	Farmers in Africa should switch to biopesticides	12-Apr-12

Mapping the Impact of Science Journalism

Author	Profile	Title of Article	Publication Date
Luc Gnacadja	Executive secretary of the UN Convention to Combat Desertification (UNCCD), which promotes a global response to desertification, land degradation and drought.	Rio+20 should make sustainable land use a top priority	18-Apr-12
Huafeng Wang	Engineer at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences.	It's time to eliminate professional bias in China	26-Apr-12
Lawrence Gudza	Programme team leader for Responding to New Technologies at Practical Action Southern Africa, based in Zimbabwe.	Successful innovation depends on engaging the grassroots	02-May-12
Anil Gupta	Founder of the Honey Bee Network and a professor at the Indian Institute of Management, Ahmedabad.	How to protect the inventions of the poor	02-May-12
Rasheed Sulaiman V., Andy Hall and T.S. Vamsidhar Reddy	Sulaiman V. is director at the Centre for Research on Innovation and Science Policy in Hyderabad, India. Hall is director of LINK. Vamsidhar Reddy is visiting scientist at AVRDC (The World Vegetable Center), Hyderabad, India.	How research for agricultural innovation works best	16-May-12
Paula Caballero Gómez	Director of Economic, Social and Environmental Affairs, Ministry of Foreign Affairs, Colombia.	Why we need Sustainable Development Goals	24-May-12
Matthew Lockwood	Leader of the climate change team at the Institute of Development Studies in Brighton, United Kingdom	Sustainability hinges on local policies, not global goals	05-Jun-12
Bitrina Diyamett and Erika Kraemer-Mbula	Diyamett is executive director of STIPRO and chairperson of the scientific board of AfricaLics. Kraemer-Mbula is senior researcher at the Institute for Economic Research on Innovation, Tshwane University of Technology, South Africa, and a member of the scientific board of AfricaLics.	Africa needs local capacity for innovation research	14-Jun-12

Mapping the Impact of Science Journalism

Author	Profile	Title of Article	Publication Date
Ramanan Laxminarayan, Petra Klepac and Bryan Grenfell	Laxminarayan is director of the Center for Disease Dynamics, Economics and Policy in Washington DC, and a research scholar and lecturer at Princeton University in New Jersey, USA. Grenfell is the Kathryn Briger and Sarah Fenton professor of ecology and evolutionary biology at Princeton University, New Jersey, USA. Klepac is a postdoctoral researcher at the Department of Ecology and Evolutionary Biology at Princeton University.	Cooperation is crucial to eliminate infectious disease	24-Jun-12
Krystyna Swiderska	Senior researcher at the International Institute for Environment and Development in London, United Kingdom.	Making the Nagoya Protocol work at the community level	03-Jul-12
Arame Tall	Consultant who specialises in climate change adaptation and climate disaster risk management in Africa. Her PhD at Johns Hopkins University in Washington DC, USA involved investigating the institutional underpinnings of effective climate change adaptation.	Climate scientists and communities can find common ground	11-Jul-12
Maria Clara Couto Soares	Senior researcher at RedeSist at the Economics Institute of the Federal University of Rio de Janeiro, Brazil.	Social innovation: tackling poverty through social change	25-Jul-12
Tufa Dinku	Associate research scientist at the Research Institute for Climate and Society, The Earth Institute, Columbia University, New York, United States.	We can improve climate information for Africa	01-Aug-12
Shirley Malcom	Head of the directorate for education and human resources programmes at the American Association for the Advancement of Science. She is also co-chair of the gender advisory board at UNCSTD and the Gender InSITE campaign.	Counting on women in development	13-Aug-12
Jean Fairbairn	Communication coordinator of the Public Library Innovation Programme at EIFL (Electronic Information for Libraries).	Public libraries — an underused resource for development	23-Aug-12

Annex 2 – Impact of SciDev.Net opinion articles

- 1) Graham Durant — director of Questaco Australia's National Science S&T Centre — started working with Mwamanyanda Lewanika (founder and CEO of STEM-Z Education Centre) shortly after the publication of the article "Africa needs more 'hands-on' science centres" (3 November 2011). This exchange began when Lewanika commented on the article which presented the idea of Using a circus to mobilise interest in science, when we contacted Mr Durant a year later he mentioned that "in 2013, Questacon and Australian National University will be touring a mobile science circus in Botswana, Malawi, Zambia & South Africa" which will have science communicators talking about science, technology, engineering and maths (STEM) at school and communities over an eight-week period. The project aims to catalyse "further development of STEM education, including establishing permanent science centres in Botswana, Zambia and Malawi" and ultimately a long-term multi-year initiative for the continent. Durant added that "from my perspective, the article has been very useful in helping make the case for the project when I talk with government officials and possible supporters". The project has partners in all the targeted countries, mainly from educational institutes such as the STEM-Z Education Centre (Zambia), the Malawi Science Centre Project and the Botswana International University of Science and Technology's Pre University Academic Programs, as well as the University of Zululand Science Centre and the Cape Town Science Centre in South Africa¹³.

In addition, a month after publication of his article, the author was asked to offer guidance on a project to make knowledge and learning informally available through science centres & museums in Pakistan. Around the same time, he was also contacted to provide input on temporary exhibition services.

- 2) Shortly after publication, John Waugh was contacted by the Scientific & Technical Advisory Panel for the Global Environmental Facility to discuss the article he wrote for SciDev.Net on 8 February 2012, "Support community mapping for climate adaptation". Within a month of publication he was invited to a workshop organised by Google Earth aimed at people who may influence the use of mapping technologies – "I think I have the article to attribute to that" says Waugh. Within six months of publication of his article, Waugh had been invited to give a lecture by the Smithsonian Conservation Biology Institute and the United Nations Environmental Programme as a result of his work. The author believes this also bolstered the case for additional projects, adding that there were active discussions on follow-on projects.

¹³ More information: <http://cpas.anu.edu.au/about-us/partnerships/science-circus-africa>

Finally Waugh reported that the Asian Development Bank expanded the pilot project he wrote about to all of the Cook Islands and is using the methodology in other Pacific Island states. However, in this specific instance, the author "cannot tell to what extent the article would have influenced this" but believes that it has "however incrementally contributed to the growing interest in the approach".

- 3) Gordon Conway, former president of The Rockefeller Foundation, United States and the United Kingdom Royal Geographical Society, and author of "How to create resilient agriculture" (21 March 2012), reported that he was "involved in a policy debate with DFID [the Department for International Development] and the European Commission surrounding the report, "Growth with Resilience", discussed in the SciDev.Net article, [which] has added to the number of people accessing the report". In addition to this, Conway was contacted by a teacher in the USA, who wrote to him saying that he would be using the report for his lectures.
- 4) In some cases, impact took the form of increased opportunities to speak at events and/or attend workshops. For example, Ndubuisi Ekekwe, founder of the non-profit African Institution of Technology and author of "Investment in ICT is no substitute for technology policy" (2 March 2012), was invited to the Moscow Open Innovation Forum and TEDXLagos. Ekekwe was also asked to include the perspective raised in his article in the keynote when attending as speaker at the Africa 4IT conference in Lagos, Nigeria (22-23 March 2012). The organisers also wanted him to participate in the debate regarding the best model for Africa ICT participation. The author added:

Whilst I cannot attribute talk invitations to the piece specifically, I am aware that many people appreciate the new perspective I raised. I do write a lot of articles, especially in *Harvard Business Review* and isolating one could be challenging in evaluating my impact in the community. Yet, I know this one resonated very well. I will be discussing some sections of this work in the New York Forum Africa this week in Gabon.

- 5) Typically the SciDev.Net 'spotlights' consist of three opinion pieces and other article types. In the case of the Ocean spotlight, the articles published on 15 February 2012 were:
 - "Pacific fisheries need tech to track climate impact" by Johann Bell
 - "Time to stop losing ocean data to vandalism" by Sidney Thurston and M. Ravichandran
 - "Why Pacific islands should take on ocean monitoring" by Ben Ponia

- a) Johann Bell, principal fisheries scientist at the Secretariat of the Pacific Community, based in New Caledonia and lead editor of the book *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change* - reported that "all the articles forming part of this spotlight were used as background material for the PACE-Net workshop on climate change and fisheries in Brussels next month. PACE-Net is an initiative to enhance research." According to the author the PACENet conference resulted in a request to produce a policy brief on climate, fisheries and aquaculture in the Pacific, which will form the basis of a white paper for the European Union to use as a guide to fund future research in this field in the region. Apart from that, the author reports that "it has been difficult to separate the impact of the article [to that resulting from] our own publicity of the fisheries and aquaculture vulnerability assessment". Perhaps as a result of both of these and the author's existing profile, Bell reports he also received invitations to the following events and working groups:
- Workshop held by the Coral Triangle Initiative to integrate climate change into guidelines for an ecosystem-based approach to fisheries management
 - Second international workshop bridging the gap between ocean acidification impacts on fisheries and aquaculture, and economic valuation approaches
 - An initiative by the UN's University to improve management of tropical coastal seas
 - UNFCCC Least Developed Countries Expert Group training on national climate change adaptation plans
 - UNFCCC: Expert Meeting on Loss and Damage
- b) Meanwhile, Ben Ponia — secretary for the Cook Islands Ministry of Marine Resources and is based on Rarotonga — reported that:

The timing for pushing for [extra] local staff and funding came about quite well because I have just returned from Manihiki, [which is referred] to in my article, where we have to deal with a rare dystrophic event where all shellfish below 25 meters are dead due to oxygen depletion caused by La Nina and pearl fouling. The capacity of local staff was key to our response mechanism and we are dealing with budgeting for this. [In summary, the article helped] raise awareness of the need to put in place proper monitoring programmes. Not directly, but as a result, we are now working with a regional organisation which has promised 800,000 euros to put a pearl monitoring programmes [related to climate change adaptation] in place.

- 6) Within a week of publication of her piece, Shirley Malcom, author of "Counting on women in development" (13 August 2012), reported that colleagues had contacted her to discuss new ideas such as planning for a meeting in Kuwait regarding women scientists and engineers in the Middle East. A month after publication, the author mentioned that her article stimulated conversation as evidenced by interactions at an advisory panel on Gender and S&T and at a meeting of The World Academy of Sciences. Finally, within six months of publication, the author reported that the article helped her reach previously unreachable areas — mainly the local fishing areas — and that outreach efforts of her opinion piece were targeted at the Gender InSITE campaign which shapes country-level discussions on women & development.
- 7) Krystyna Swiderska, author of "Making the Nagoya Protocol work at the community level" (3 July 2012) believes that the piece contributed to the debate on the Nagoya Protocol's provisions relating to community protocols — along with a new International Institute for Environment and Development publication on community protocols. She adds:

At the government meeting on the Nagoya Protocol in early July, community protocols were identified as a priority for the capacity-building plan. I am sure that the article contributed to IIED's overall influence, but I cannot say how much was due to this relative to our other activities.
- 8) Nigel Pitman wrote "How 'geotags' could track developing world science" (12 October 2011) and was able to make a new contact at The world Academy of Sciences who was interested in developing a proposal based on the geotag idea. He also received an email from an old contact at the University of Florida, United States, interested in the same thing. When contacted a year later, he could not tell whether the new contacts had actually managed to develop successful proposals.
- 9) As a result of her article titled "Public libraries — an underused resource for development" (23 August, 2012) Jean Fairbairn thought that she was invited to the HIFA2015 (Health Information for All 2015) on behalf of her organisation (Public Library Innovation Programme at Electronic Information for Libraries) to facilitate a discussion on the HIFA forum.
- 10) A piece by Vineeta Dixit, "Local needs are the future for IT innovations" (17 November 2011) was noticed by one of the companies mentioned in the article and they have since contacted the Department of Information Technology, Ministry of Communications and IT in India to find synergies with the Common Services Centre Project, an e-governance project.

- 11) The writers of "How to engage with farmers over GM crops" (22 February, 2012) Obidimma Ezezika and Justin Mabeya reported that an agricultural biotechnology public-private partnership called Maize for Africa Project has found the opinion piece useful in modifying its communication strategy with farmers.
- 12) Within three months of publication, Maria Clara Couto Soares author of "Social innovation: tackling poverty through social change" (25 July 2012) reported that she had exchanged further information and references on the subject with researchers and academics as well as policymakers. For the latter, she mentioned the STI Group of the Planning National Department of Colombia, adding that the main topics raised in the article have been disseminated and debated in workshops and seminars in Brazil and other BRIC countries.
- 13) Najin Saab, author of "Arab countries need green economies rooted in science" (28th March 2012), received a request from Greece to write a commentary on Arab expectations from Rio+20 from somebody who read the author's opinion¹⁴.
- 14) "It's time to eliminate professional bias in China" (26 April, 2012) by Huafeng Wang an engineer at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences reported that within three months of publication of his article, a new policy was implemented that brought in high-end technical management talents in his work unit and that more attention was being paid to the work and living of the engineers in general.

¹⁴ <http://www.najibsaab.com/english/articledetails.asp?id=90>

- 15) Tufa Dinku, author of "We can improve climate information for Africa" (1 August 2012) reported within the first week of publication of his article that he was contacted by three groups working on data in Africa (two from the United Kingdom and one from United States) and that he was invited to attend a workshop by one of these and was asked by another to take part in discussions. A month of publication, he mentioned that he had received the attention of the high-level management of Columbia University, including a university-wide team working on a big data repository for the country and that he had been invited to attend one of the group's meetings.

About SciDev.Net Learning Series

The publications in the SciDev.Net Learning Series derive insights from research projects and analysis regarding science communication. The series is part of SciDev.Net's monitoring and evaluation programme and provides valuable knowledge and lessons regarding the mainstreaming of evidence for policymaking, development programmes and when building a culture of science.

The publications should appeal to anyone with an interest in the use of science and technology in development and poverty reduction.



SciDev.Net
9-11 Richmond Buildings | London | W1D 3HF | UK
+44 (0) 20 7292 9910
ourlearning@scidev.net
www.scidev.net