

Results of the FAO Biotechnology PAIA Stakeholder Survey

FAO Working Group on Biotechnology
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Summary

As part of an overall strategy of enhancing interdisciplinarity within the Food and Agriculture Organization of the United Nations (FAO), a number of Priority Areas for Interdisciplinary Action (PAIAs) were identified a few years ago. One of these was biotechnology and a major role of the Biotechnology PAIA has been to provide FAO Members and their institutions with factual, comprehensive and current information on international developments relating to biotechnology applications. An evaluation of the Biotechnology PAIA took place in December 2005 and January 2006 where stakeholders were invited to fill out a questionnaire soliciting their views on the Biotechnology PAIA activities. A total of 174 questionnaires were received, from over 60 different countries. Over half of the responses were from people living in developing countries. Results show that biotechnology PAIA materials disseminated through the web or by e-mail were regularly consulted whereas hardcopy materials were relatively little used. The survey indicates a high degree of satisfaction with the Biotechnology PAIA activities and products and the overall assessment of the information supplied by the PAIA was very positive, based on the criteria of usefulness, credibility, relevance to developing country needs, availability, comprehensibility and on it being science-based and up-to-date. Almost 30% of respondents said the Biotechnology PAIA information was their primary source (or mostly their primary source) of information on biotechnology. The majority (75%) of these were from developing countries. Over one third of respondents, most living in developing countries, thought the information had affected policy-making in their country.

1. Introduction

As part of an overall strategy of enhancing interdisciplinarity within FAO, a number of Priority Areas for Interdisciplinary Action (PAIAs) were identified by FAO. Biotechnology was one of these PAIAs, and the FAO Working Group on Biotechnology was established a few years ago to oversee its planning and implementation. The Working Group is currently chaired by Shivaji Pandey (<http://www.fao.org/biotech/cont.asp>).

A major role of the Biotechnology PAIA is to provide FAO Members and their institutions with factual, comprehensive and current information on international developments relating to biotechnology applications. This is done through, for example, the FAO Biotechnology website (www.fao.org/biotech/index.asp), an e-mail newsletter FAO-BiotechNews, and a series of moderated e-mail conferences hosted by the FAO Biotechnology Forum. The information is disseminated through the World Wide Web, by e-mail (newsletter or e-mail conferences) and in hardcopy format (books).

To ensure that the Biotechnology PAIA continues to address important issues in biotechnology and its application, and meet the needs of FAO's stakeholders, an evaluation of the Biotechnology PAIA took place in December 2005 and January 2006. A Stakeholder Survey was carried out using an e-mail based questionnaire sent to the members (almost 3,000 people) of the FAO Biotechnology Forum and a web-based questionnaire (the same as the e-mail version) posted on the FAO Biotechnology website. The questionnaire solicited views on the Biotechnology PAIA activities and contained 12 questions. It was available in English only. This document presents the main results of the Survey.

2. Results

2.1 Who replied?

The Stakeholder Survey was completed by 174 respondents in total: 136 returned the e-mail questionnaire and 38 completed the web-based questionnaire. The 169 respondents who indicated their country of residence came from 61 countries, covering the world's major regions: 48 from Europe, 38 from Latin America and the Caribbean, 29 from Africa, 24 from Asia, 20 from North America and 10 from Oceania. The greatest number of responses came from the United States (12), followed by Italy, India, Canada, Nigeria and the United Kingdom. There were 77 responses from people living in developed countries and 92 (54%) from developing countries.

A total of 76% of respondents worked in research, 49% in education and 29% in administration (people were able to tick more than one work area). Ten percent worked for NGOs and under 5% were producers. Of the other areas of work, there were several consultants, some journalists and a few lawyers.

2.2 Stakeholder use of Biotechnology PAIA materials made available on the web

The FAO Biotechnology website was launched in March 2000 and since then it has been systematically updated and widened in coverage, so that it now provides information in five languages (English, French, Spanish, Arabic and Chinese) on FAO's work and international developments regarding biotechnology techniques and products, as well as on related policy and regulatory issues surrounding research and deployment of agricultural biotechnology. In addition to the FAO Statement on Biotechnology, produced by the Working Group in 2000 in response to the many requests to know "where does FAO stand on biotechnology?", the website includes e.g. the multi-lingual searchable FAO Biotechnology Glossary and FAO-BioDeC, a searchable database providing information on biotechnology products/techniques in use or in the pipeline in developing countries.

Regarding the use of web-based materials produced by the Biotechnology PAIA, the results are given in Table 1. The vast majority of respondents consulted the web-based materials one or several times a year, or even more often. The FAO-BioDeC database was consulted by fewer people than the other materials, although 60% of respondents consulted it at least once or several times a year.

Table 1. How often do you consult the following materials on the web?						
	Never	One to several times a year	Monthly	Weekly	Daily	Response Total
a. FAO Biotechnology website View	6% (11)	54% (92)	25% (42)	15% (25)	1% (1)	171
b. FAO Biotechnology Glossary View	33% (55)	47% (79)	13% (22)	8% (13)	0% (0)	169
c. FAO-BioDeC database on biotechnology products/techniques View	41% (69)	39% (66)	15% (25)	5% (9)	1% (1)	170
d. FAO-BiotechNews webpages View	21% (35)	43% (72)	24% (41)	11% (19)	1% (1)	168
e. FAO Biotechnology Forum View	8% (14)	60% (102)	19% (33)	8% (14)	4% (7)	170
f. FAO Statement on Biotechnology View	31% (53)	47% (80)	15% (25)	7% (12)	0% (0)	170
Total Respondents						171
(skipped this question)						3

The questionnaire also asked what were the major problems encountered in consulting the Biotechnology PAIA information on the web. Responses showed that most problems concerned slow

internet connections (19%) - or no internet connections, although the majority of respondents (47%) experienced no problems. Limited time was another major constraint reported by the respondents (35%). Very few commented on difficulties of language (2%). A total of 21% of respondents found the relevant material difficult to locate. This is important considering the general time constraints experienced by the respondents.

2.3 Stakeholder use of Biotechnology PAIA materials provided by e-mail

FAO-BiotechNews is an e-mail newsletter containing news and event items that are relevant to applications of biotechnology in food and agriculture in developing countries. Items focus on the activities of FAO, other United Nations agencies/bodies and the 15 Consultative Group on International Agricultural Research (CGIAR) research centres, in addition to a few major non-UN inter-governmental organisations. It was launched in 2002 and later expanded to include French and Spanish editions in 2003 and a Russian edition in 2005.

The FAO Biotechnology Forum was established in March 2000 with the aim of providing quality balanced information on agricultural biotechnology in developing countries and to make a neutral platform available for people to exchange views and experiences on this subject. It has hosted 13 moderated e-mail conferences, normally lasting 4-5 weeks.

Results show that these e-mail materials were consulted regularly, mostly once to several times a year, as indicated in Table 2.

	Never	One to several times a year	Monthly	Weekly	Daily	Response Total
a. FAO-BiotechNews newsletter (in any of its languages)	14% (24)	45% (75)	28% (47)	11% (19)	1% (2)	167
b. FAO Biotechnology Forum (e-mail messages, background or summary documents)	11% (18)	51% (85)	22% (37)	11% (19)	5% (9)	168
Total Respondents						168
(skipped this question)						6

2.4 Stakeholder use of Biotechnology PAIA materials in hardcopy format

A small selection of books has been published arising from the Biotechnology PAIA's activities. These include the FAO Biotechnology Glossary, published in 1999 and in an augmented version in 2001, that has since been translated and published in hardcopy form in Arabic, French, Spanish and Vietnamese. It also includes a 2001 book, in English and Spanish, containing the key documents from the first six e-mail conferences of the FAO Biotechnology Forum as well as a 2005 publication containing a first analysis of the crop-sector entries in FAO-BioDeC. These PAIA publications were provided by FAO free of charge to anyone requesting a copy.

As Table 3 shows, these hardcopy materials were relatively little used, with 73-82% of respondents indicating that they had never consulted them.

Table 3. How often do you consult the following books in hardcopy?						
	Never	One to several times a year	Monthly	Weekly	Daily	Response Total
a. FAO Biotechnology Glossary (in any of its languages) View	73% (124)	19% (32)	5% (9)	2% (3)	1% (1)	169
b. FAO-BioDeC publication (Dhlamini et al., 2005) View	82% (139)	14% (24)	3% (5)	1% (1)	0% (0)	169
c. FAO Biotechnology Forum publication (Ruane & Zimmermann, 2001) View	74% (124)	21% (35)	4% (7)	1% (2)	0% (0)	168
Total Respondents						170
(skipped this question)						4

2.5. Relative importance of these Biotechnology PAIA information materials

People were asked whether the information included in Tables 1-3 was their primary source of information on biotechnology. Of the 169 responses to the question, the overwhelming majority (115, i.e. 68%) said no; 6 (4%) had no opinion; 32 people (19%) said 'mostly' and 16 (9%) replied yes. It is noteworthy that of the 48 people (28%) who considered it to be their primary source (or mostly their primary source) of information, 75% were from developing countries.

2.6 Use of non-PAIA publications

The Working Group has been regularly called upon to provide inputs to the work of FAO governing bodies, the Commission on Genetic Resources for Food and Agriculture, other PAIAs and other units within the Organization (and to the work of other Organizations). In the Survey, people were also asked about their use of a small selection of non-PAIA publications, for which there had nevertheless been PAIA inputs. Results indicate that the SOFA 2003/2004 report was most consulted of these and also that over 40% of people had consulted the other publications (Table 4).

Table 4. How often do you consult the following non-PAIA publications?						
	Never	One to several times a year	Monthly	Weekly	Daily	Response Total
a. "Agricultural Biotechnology: will it help?" (2003, part of FAO's on-line "Focus on the Issues" series) View	56% (94)	38% (64)	5% (9)	1% (2)	0% (0)	169
b. The 2003/4 edition of the FAO publication "The State of Food and Agriculture: Agricultural Biotechnology: meeting the needs of the poor?" View	31% (53)	58% (98)	9% (16)	2% (3)	0% (0)	170
c. "Preliminary review of biotechnology in forestry, including genetic modification" (2005, FAO Forest Genetic Resources Working Paper 59) View	58% (98)	34% (57)	6% (10)	2% (3)	0% (0)	168
Total Respondents						170
(skipped this question)						4

2.7 Overall assessment of the information supplied by the Biotechnology PAIA

Results of the Stakeholder Survey revealed a high degree of satisfaction with the Biotechnology PAIA activities and products and the overall assessment of the PAIA, in terms of the information it supplied, was very positive, as indicated below in Table 5. Very few of the respondents found fault with the PAIA products in terms of usefulness, credibility, scientific basis, relevance to developing country needs, availability, comprehensibility or up-to-datedness.

Table 5. What is your overall assessment of the information supplied by the Biotechnology PAIA?					
	No	Mostly	Yes	No opinion	Response Total
Useful	1% (2)	31% (51)	61% (102)	7% (12)	167
Credible	1% (2)	21% (35)	67% (110)	10% (17)	164
Science-based	1% (1)	33% (55)	55% (92)	11% (19)	167
Relevant to developing country needs	2% (3)	31% (52)	48% (80)	19% (31)	166
Easily available	8% (14)	30% (50)	47% (78)	14% (23)	165
Easily understood	2% (4)	32% (52)	53% (87)	13% (21)	164
Up-to-date	2% (4)	34% (56)	46% (77)	18% (30)	167
Total Respondents					167
(skipped this question)					7

2.8 Impacts of Biotechnology PAIA information

Most participants in the Stakeholder Survey indicated that the Biotechnology PAIA information had, at least sometimes, created better awareness of issues of biotechnology within their respective organizations (Table 6). In addition, most respondents (76%) had, on at least some occasions, passed on Biotechnology PAIA information to others who lacked direct access to it. The information had encouraged new partnerships within organizations according to 39% of the respondents and had not according to the views of 42%. Asked whether they thought the Biotechnology PAIA information had affected policy-making in their country, 27% of respondents said no, 39% had no opinion, while 59 people (35%) said it had, at least sometimes. The majority (75%) of people who said it had affected national policy-making were living in developing countries.

Table 6. Impacts of the PAIA information on biotechnology.					
	No	Sometimes	Yes	No opinion	Response Total
a. Has the information created better awareness of issues of biotechnology in your organization?	9% (15)	37% (63)	38% (65)	16% (27)	170
b. Has the information created better awareness of issues of biotechnology in your country?	16% (27)	24% (41)	19% (33)	41% (69)	170
c. Have you passed on the information to others who lack direct access to it?	17% (29)	27% (46)	49% (83)	7% (12)	170
d. Has the information encouraged new partnerships among colleagues in your organization?	42% (72)	19% (33)	20% (34)	18% (31)	170
e. Has the information encouraged new partnerships among colleagues in your country?	28% (48)	16% (27)	18% (30)	38% (65)	170
f. Has the information encouraged new partnerships with colleagues in other countries?	27% (46)	21% (36)	15% (25)	37% (63)	170
g. Do you think the information has affected policy-making in your country?	27% (46)	25% (43)	9% (16)	39% (66)	171
Total Respondents					171
(skipped this question)					3

In an additional question, people were asked "If the information had any other practical impacts, let us know in your response to us". Several issues were mentioned by the 33 respondents who replied to this. They said that awareness had been created of biotechnology issues in the international context and of developments in biotechnology. University students, among others, were able to use the information. The PAIA activities, particularly the e-mail conferences of the FAO Biotechnology Forum, had "*opened international discussion from a credible organization that is both independent and authoritative*". The work was seen to support FAO's role as an independent honest broker of information that is frequently controversial. One respondent noted that the Brazilian press frequently cited information produced by the Biotechnology PAIA, while others noted its importance to journalists.

Impact might be assessed through citations of information provided by the Biotechnology PAIA. While the impact of the Biotechnology PAIA material cannot be easily gauged, searches on Google indicate that e.g. documents from the Biotechnology Forum have been widely disseminated and used as reference material for numerous publications. It is also known that on at least some occasions, the Forum reports have been used as background information for development of national biotechnology policy in specific developing countries.

2.9 Suggestions for improvement

The 12th and final box in the questionnaire asked people to suggest some improvements that could be made by FAO to provide better information on agricultural biotechnology.

Increased and improved information dissemination was suggested to be possible through increasing the emphasis on capacity building, coordinated through the Biotechnology PAIA. There were suggestions to hold workshops and organize training courses with a view to encouraging regional and inter-regional networking. An additional related issue was one raised by many respondents concerning the need for hardcopy material in developing countries with limited or no access to modern communication channels (e-mail and the web). Account might also be taken, it was suggested, of

language requirements. A sizeable potential clientele was unable to communicate easily in the five languages of FAO. Translation of some information products into Russian and Vietnamese was appreciated and information provided in other widely spoken languages might be similarly appreciated. Several people noted that the Biotechnology PAIA had not done enough to promote awareness of the website and its products.

3. Final Considerations

The main questions that people were asked in the survey concerned the frequency with which they used Biotechnology PAIA materials (disseminated in various ways - through the web, e-mail or in book form); their assessment of the information provided and its impacts on their organisation/country. Caution is recommended when extrapolating from some results of the Survey. It has to be remembered that the 174 respondents do not represent a random sample. Most of them (almost 80%) were members of the FAO Biotechnology Forum. The Forum has about 3,000 members and has hosted 13 e-mail conferences so far, with roughly 450 members joining an average conference. Although people's level of participation in the Forum varies considerably, e.g. some have never subscribed to a conference (simply receiving the 2 main documents produced for each conference) while others have participated in several, they are likely to consider the Forum information useful, otherwise they could simply unsubscribe themselves. Similarly, the remaining 20% of respondents were recipients of the FAO-BiotechNews e-mail bulletin or visitors to the FAO Biotechnology website and might therefore be biased towards products of the Organization. All respondents had an e-mail account or access to the web.

Keeping these reservations in mind, we can nevertheless attempt to highlight some final considerations from the results of the survey. Firstly, although Biotechnology PAIA materials are regularly consulted on the web or by e-mail, hardcopy materials are used much less frequently, despite the fact that respondents emphasised the need for hardcopy material in developing countries with limited or no access to modern communication channels. This suggests that the PAIA should make greater efforts to let people know about these hardcopy resources and to ensure that these resources are accessible to people in developing countries. Secondly, the PAIA has aimed to be at the forefront in providing high-quality, updated, balanced science-based information about agricultural biotechnology to its Member countries and in providing a neutral platform for the exchange of information on this, often controversial, subject. Results of the survey suggest that this goal has been achieved, as the overall assessment of the information supplied by the Biotechnology PAIA was very satisfactory, based on the criteria of usefulness, credibility, relevance to developing countries and of it being science-based, easily understood and up-to-date. For each of these six criteria, only 2% or less of respondents felt that the PAIA information was not satisfactory. Thirdly, the Biotechnology PAIA information seems to be particularly important for developing countries. Almost 30% of respondents said the PAIA information was their primary source (or mostly their primary source) of information on biotechnology. Also, 35% of respondents said the information had affected policy-making in their country. In both cases, 75% of these respondents were from developing countries.

FAO will use the results of this survey to better meet the biotechnology information needs of its stakeholders and, in so doing, it is willing to continue to act as a 'neutral broker' in this area to assist its Members to harness the potential of science and technology to improve agriculture and people's access to food, while ensuring that the implications and risks in doing so are adequately addressed.

4. Acknowledgements

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