Penelope Beynon
Christelle Chapoy
Marie Gaarder
Edoardo Masset

What Difference does a Policy Brief Make?

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Penelope Beynon, Christelle Chapoy, Marie Gaarder and Edoardo Masset

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Summary

Research has potential to improve the lives of the world's vulnerable people *if* it is appropriately referred to in decision-making processes. While there is a significant industry of activity each year to communicate research findings, little systematic research has tested or compared the effectiveness of such efforts either for changing beliefs or for prompting action. Using a randomised control design, this study explored the effectiveness of one popular research communication tool, a policy brief, and queried whether different versions of a brief bring about different results. We find that the policy brief had little effect on changing the beliefs of readers who held strong prior beliefs on entering the study, but had some potential to create evidence-accurate beliefs among readers holding no prior beliefs. Also, when it comes to beliefs, the impact of the policy brief seems to be independent of the specific form of the policy brief. However, different versions of the brief (versions that include a research Opinion with or without a suggestion that the opinion is from an Authoritative source) do achieve different results when it comes to prompting actions. We find that other factors internal and external to the brief (gender of the reader, reader's self-perceived level of influence and the extent to which the reader feels 'convinced' by the brief) are also linked to action. This first-of-its-kind study has implications for how research communication experts design policy briefs, how they understand and enable readers to act as knowledge brokers in their particular environment, and how we evaluate research communication going forward.

Keywords:
Research communication, RCT, randomised control trial, policy brief, beliefs, actions

Authors

Penelope Beynon is an independent M&E Advisor, with a particular interest in embedding organisational learning systems and facilitating frontline-led change. Penelope believes that people learn best when they identify issues and solutions themselves, and during her time as M&E Advisor in IDS' Impact and Learning Team she put this belief to the test developing a Facilitated Self Evaluation approach that takes a non-expert project team through a robust evaluation of their own work. She has undertaken research and evaluation focused on a range of social policy issues; including labour market policy, pensions policy reform, research communication for international development and a range of child-focused services.

Christelle Chapoy leads on 3ie's advocacy and policy influence services. Christelle has worked in the field of communications for development for over 10 years with the United Nations Development Programme in New York, London, Cambodia and in its Bangkok Regional Centre, and managed the advocacy and communications project of Oxfam's largest humanitarian programme in Aceh. Prior to joining 3ie, she was consulting with the leading publishing company Random House in India and the Indian Ministry of Rural Development. She holds an MA in International Peace and Security from King's College London and a Master in political sciences from l'Institut d'Etudes Politiques d'Aix-en-Provence, France.

Marie Gaarder is the Director of the Evaluation Department in the Norwegian Agency for Development Cooperation (NORAD). Prior to joining NORAD she was the Deputy Executive Director of the International Initiative for Impact Evaluation, 3ie, and a Senior Social Development Economist at the Inter-American Development Bank. Marie holds a Ph.D. in Economics from University College London. Her publications range a number of areas, including environmental health, conditional and unconditional cash transfer programs, the institutionalization of government evaluation, and the use of evidence in decision-making.

Edoardo Masset is an agricultural and development economist with over ten years of experience in international development in Asia, Africa and Latin America. He has extensive experience in designing and conducting impact evaluations of development interventions. He has excellent statistical and econometric research skills, and considerable experience in managing local economic development programmes in Honduras and Mongolia.

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Acronyms

C4D	Communication for Development
CATI	Computer Assisted Telephone Interviewing
CCT	conditional cash transfers
DD	Difference in difference
DRM	Disaster Risk Management
EBPDN	Evidence-Based Policy in Development Network
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
KM4Dev	Knowledge Management for Development
M & E	Monitoring and Evaluation
MDG	Millennium Development Goal
ODI	Overseas Development Institute
RAPID	Research and Policy in Development
RCT	Randomised Controlled Trial
SciDev.Net	Science and Development Network
SR	Systematic reviews
UCT	Unconditional cash transfers
UNICEF	United Nations Children's Fund
WFP	World Food Programme
vif	variance inflation factors
WHO	World Health Organization

1 Introduction

1.1 Why does research communication matter?

A large number of development conferences and a growing body of research and blogs are dedicated to the mission of increasing use of research evidence in policymaking processes. Why? The obvious answer is that policies, a broad term used for decisions that affect a significant number of people's lives, *do* affect a significant number of people's lives, or at least they have the potential to. Hence, we are interested in the decisions being as 'good' as possible. And we think 'good' decisions are achieved when they are informed by 'evidence' that show that these policies 'work'; that the decision chosen is the best available option given the set of outcomes it is designed to achieve. While this line of argument should be timeless, the topic of evidence-based and evidence-informed policies has gained new momentum over the last decade with the heightened focus on the results agenda, aid quality, and development effectiveness, captured in the Paris and Busan declarations. A mixture of aid fatigue and financial crises have increased the emphasis on ensuring good returns for the investment of scarce public funds, and the constant improvements in the tools and methods for measuring results is probably an adequate summary of what brought about this evidence-revolution. Research provides one form of evidence in the evidence-revolution,[1] and a key question for those of us working in research institutions, is how best can we communicate research so that it informs relevant policies and practice?

It has frequently been pointed out that policy influence rather than being a linear process is likely to be complex, with feedback loops and two-way processes between research, policy and practice (ODI 2004; Walt 1994). 'Searching for a direct connection between one masterpiece of scientific discovery and policy is to misunderstand the nature of the policy environment. New information and knowledge do percolate through the policy environment and become part of policymakers' thinking, not in a clear linear fashion, but in a much more diffuse way….like water falling on limestone' (Walt 1994: 2). As pointed out in a report by the WHO, policy change often begins before it is recognised as such. 'At every stage of this process – from the generation of knowledge, to its entry into the public discourse, to the nature of the debate it provokes, to the policy options that are finally identified by decision-makers over time, to the policy change that finally occurs – interest groups and conflicting coalitions are at work…..While a robust policy debate may not directly influence governmental decisions, it serves a critical enlightenment function by gradually altering concepts and assumptions of policy-makers over

[1] While what constitutes evidence is subject to much debate and disagreements, we will limit our discussion in this paper to research-based evidence.

time'. (WHO 2002: 10–11). The ODI identifies the relevant question to ask as being 'Why are some of the ideas that circulate in the research/policy networks picked up and acted on, while others are ignored and disappear?' (ODI 2004: 2). The institute suggests that it is in the interplay between the political context, the evidence, the links between policy and research communities, and the external context that the adoption of evidence by policymakers and practitioners is being determined. Walt (1994) suggests that politics may affect how much notice policymakers take of research results; 'Where governments are committed to policy on ideological grounds, they may be only secondarily interested in research findings, especially if these challenge or question the policy impetus, its ideological basis or authoritative knowledge'. (Walt 1994: 3).

While maximising the influence of development research on public policy and action is admittedly a challenge in general, in his recent book '*Knowledge to Policy*' Fred Carden points out how much harder this is in developing countries due to greater challenges on the governance and implementation front, greater staff turnover, a lack of demand for research, lack of data, and lack of intermediary institutions that carry research to policy. (Carden 2009).

Most of the factors that influence research uptake are beyond the control of research communicators. But one factor that is within their control is the design and dissemination of the documents they produce for policy audiences. In particular, the design of their policy briefs.

A policy brief is a concise standalone document that prioritises a specific policy issue and presents the evidence in non-technical and jargon-free language.[2] In general, the purpose of a policy brief is to distil or to synthesise evidence with the intention of influencing the thinking and actions of policy actors as they take decisions in complex policy processes. That is, to achieve the elusive outcome of evidence-informed policymaking.[3] Many funders require research organisations to produce succinct summaries of research findings in a 'user-friendly format' to ensure that funded research is disseminated and understood by target audiences. For decades, policy briefs have dominated as the format of choice for both scholarly and advocacy-based organisations seeking to influence policymakers. But despite the proliferation of the policy brief,[4] very little serious research has been undertaken to explore their value, both in terms of usage and effect.

[2] 'Policy brief' has been variously defined by a multitude of authors and institutes, generally in 'how to' guidance notes. Guidance is often conflicting (e.g. advice as to whether the brief should be neutral or include opinions), and while most guidance agrees on general principles, no single format has been proven to be best.
[3] Policymaking is complex and the discussion of its complexity are well rehearsed elsewhere (See ODI, 2004; Walt, 1994; WHO 2002; Carden, 2009 for examples). We don't suppose that any researcher or communication expert would propose to bring about evidence-informed policy using a standalone policy brief and no other tools or plan for engagement.
[4] A search of the term 'policy brief' returned no less than 30 million results in general Google and 2.8 million results in Google Scholar.

The Overseas Development Institute (ODI) and the Science and Development Network (SciDev.Net) interviewed a sample of policymakers from developing and developed countries and reported that while 50 per cent of policymakers and 65 per cent of researchers think that dissemination of research findings is not sufficient to have an impact on policy, 79 per cent do think that policy briefs are valuable communications tools. Thus justifying the demand for policy briefs, Jones and Walsh go on to list a number of 'key ingredients of effective policy briefs', including two that are of interest to this study: 1) authority, described as a messenger (individual or organisation) that has credibility in eyes of policymaker, and 2) opinion, described as presentation of author's own views about policy implications of research finding (Jones *et al*. 2008). The findings of this study have been contested due to the leading nature of some of the questions that were fielded (*ibid*), nonetheless they raise interesting questions about what makes for an effective policy brief, and whether such a thing exists.

A policy community survey commissioned by IDRC's Thank Tank Initiative and carried out across Africa, Latin America and Asia, contests the findings from the ODI/SciDev survey and finds policy briefs to be among the least useful forms of information exchange to support their work in national policy. The study also shows that informal communications, such as newsletters and online forums, are considered less useful than user-driven, self-directed information exchanges such as statistical databanks, online publications and reports. In-person events and advice from individual experts was also considered more useful than briefs and bulletins (Cottle 2011).

So we see that despite their popularity, the value of policy briefs is disputed. A lesson emerging from these studies is that policy briefs are useful when policy interest exists, capacity is there to absorb, timing and context are favourable, the message and conclusions are clear, and when the brief is but one of the information and exchange tools used. In line with this perspective, some would argue that a policy brief is never intended to have influence in and of itself but rather as part of a package of engagement.[5] Nonetheless, most organisations *do* put their policy briefs out on their own and into the public domain, both electronically and in hard copy, where they can be (and are) read by any interested actor. While they may be on the periphery of most influencing strategies, these actors are many and varied and they have potential to be influenced by research communications, and potential to go on to influence policy and practice processes in under-explored ways.

So, policy briefs remain one of the most commonly used tools by international development agencies, research institutes and research-to-policy intermediaries. While opinions of their

[5] In a recent blog discussion, Enrique Mendizabal describes policy brief use as 'something one leaves behind after a meeting (or sends in advance). It is what gets forwarded, etc. But does it influence on its own? Certainly not.' http://onthinktanks.org/2012/03/30/should-think-tanks-write-policy-briefs-what-an-rct-can-tell-us/ (Accessed 30 March 2012).

usefulness diverge, actual experiments on the effectiveness of policy briefs have not previously been carried out. We decided to do just that – both to shed some light on what makes for an effective policy brief and to explore whether an experimental design could be used to better understand the effectiveness of research communication tools.

1.2 A simple theory of change for a policy brief

A simple theory of change for a policy brief is presented in Figure 1.1. It predicts that a policy brief reaches a reader and prompts him or her to engage with a message; by engaging with the message readers update their knowledge on a topic and create an evidence-accurate belief; these new or reinforced beliefs spark an action commensurate with the reader's role; and depending on the current opportunity for change, some or all of the reader's actions will lead to changes in policies and/or practice within their sphere of influence.[6]

Figure 1.1 A simple theory of change for evidence-based policy and practice

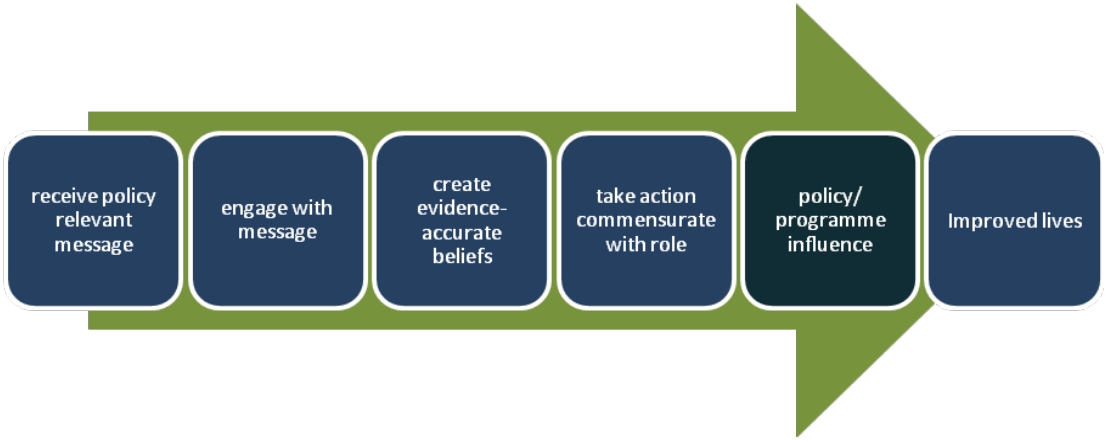


Figure 1.1 is certainly overly simplistic. Studies of media communication have focused on the phenomenon that different individuals may receive the same message but act on it quite differently. Influential studies conducted by Carl Hovland throughout his career (for example, Hovland 1954) concluded that people are very selective in how they use media; in particular regarding exposure, interpretation of information, and retention of information obtained through the media. In particular, three types of selectivity are relevant to our study:

- selective exposure (whereby people seek out not only topics of interest to them but more importantly viewpoints with which they expect to agree);

[6] The piece of evidence does not necessarily entail change, as it could confirm and reinforce an existing attitude or policy, however demonstrating an active selection of the status quo poses a particular challenge to those interested in measuring policy influence activities.

- selective perception (whereby people interpret facts to suit their existing biases), and;
- selective retention (whereby people remember messages that support their opinion longer than they remember opposing messages).

So what would this mean for our simplified theory of change? Firstly, we cannot assume that when readers receive a policy brief they automatically *engage with the message* by reading the brief. It is far more likely (particularly in this era of information overload) that discerning readers discard a significant amount of information they receive without ever reading it at all based on quick judgements informed by a few features that are immediately apparent (e.g. title, source and whether they find the visual layout pleasing). That is, they exercise selective exposure.

Secondly, selective perception and selective retention theories suggest that reading is not (necessarily) believing. Depending on the type of priors a reader holds, it may take repeated evidence before he or she actually updates his/her beliefs to *form an evidence-accurate belief*, and if it is a firmly held belief (fundamental prior) it may not lead to any update at all. Indeed, evidence suggests that when confronted with evidence that undermines a strongly held opinion (a 'fundamental prior') people tend to hold their prior belief even more fiercely (Edwards and Smith 1996; Lord *et al*. 1979). The tendency is to accept evidence that confirms one's prior opinion at face value while subjecting 'disconfirming' evidence to critical evaluation – the so-called 'disconfirmation bias'.[7] Furthermore, the idea that attitudes and beliefs on any given subject are readily available in a 'mental file' that can be consulted and reported upon in a survey, the so-called file-drawer model (Wilson and Hodges 1992), has been widely criticised (Tourangeau *et al*. 2000).[8]

Finally, some particularly challenging assumptions surround the *actions* step in our simple theory of change, i.e. that information which is read, understood, and absorbed will lead to action. It is well understood that a number of contextual factors will influence a reader's tendency to translate information to action, even if they have engaged with and been convinced by a message. So those readers who do develop an evidence-accurate belief may still fail to act. Alternatively, readers who don't update their beliefs (either because they never engaged with the brief or because they consciously or unconsciously rejected the message) may succeed in taking action. Just as readers

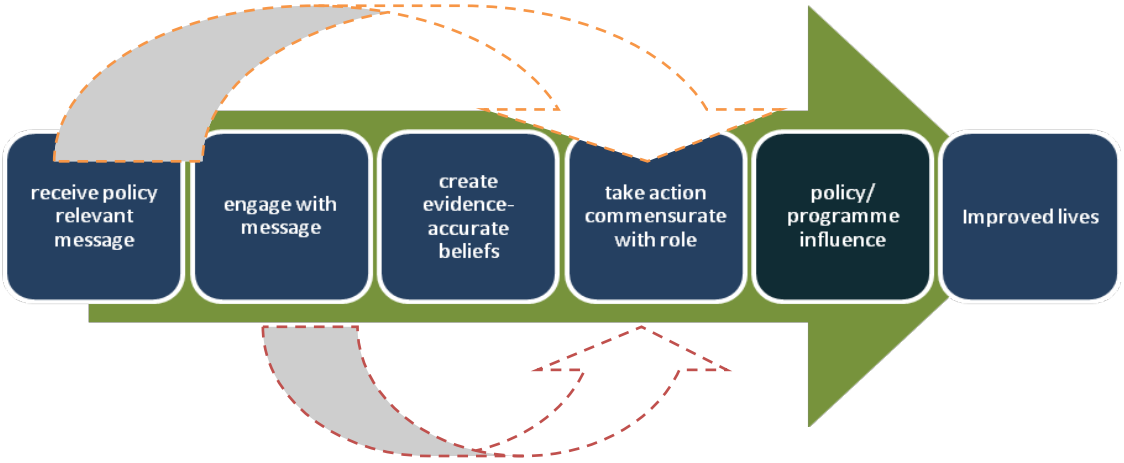
[7] 'To test these assumptions, 48 undergraduates supporting and opposing capital punishment were exposed to two purported studies, one seemingly confirming and one seemingly disconfirming their existing beliefs about the deterrent efficacy of the death penalty. As predicted, both proponents and opponents of capital punishment rated those results and procedures that confirmed their own beliefs to be the more convincing and probative ones, and they reported corresponding shifts in their beliefs as the various results and procedures were presented. The net effect of such evaluations and opinion shifts was the postulated increase in attitude polarisation' (Lord *et al*. 1979).

[8] 'The evidence suggests that there are multiple paths to an answer to an attitude question, just as there are multiple routes to placing an event in time or making frequency judgements. Which path is taken in any given instance depends on the accessibility of the necessary information and on strategic considerations, such as the amount of time the respondent takes and his or her motivation to render a defensible judgement.' (Tourangeau *et al*. 2000: 178).

make quick decisions about whether or not they will read a brief themselves, they can also make quick decisions to send the brief on to others within their knowledge network. Likewise, readers who mistook the message of a brief could still succeed in taking any range of actions based on their misunderstanding, and those who rejected the message of a brief may be prompted to research further, for example.

With these points in mind, when interpreting the findings of our study we need to assume that readers can bypass steps in our simple theory of change (Figure 1.2).

Figure 1.2 A simple theory of change for evidence-based policy and practice



1.3 Reader characteristics that could affect results

When examining the relationship between reading the policy briefs and the beliefs and actions that follow, we were particularly interested in exploring gender, level of education, and self-perceived level of policy influence as potential effect modifiers (factors that may modify the treatment's effect on the outcome). We theorised that differences could exist between the beliefs, types of action or levels of actions reported by men and women, and these differences may reflect actual differences in outcomes of achieved or different survey reporting behaviour.

When it comes to actual outcomes (beliefs and actions), there may be a number of drivers for gendered effects: in their reading of the brief, men and women may respond differently to the format, writing style and gender of the author making them more or less likely to be influenced by what they read; men and women may have different tendencies for action driven by innate qualities or by the environment in which they work. In their 2009 study of gender, language and social influence, Reid

and colleagues claim that 'linguistic style, stereotypes and social influence are tightly intertwined' (Reid et al. 2009: 466) and draw on self-categorisation theory, role congruity theory and expectation states theory to explain variation in men and women's responses to a social message presented by a female reader who was introduced as either female or highly educated. They suggest that a complex interplay of factors determined by the listener affect men's and women's responses to messages;[9] in particular, a) the listeners' stereotyped expectations (regarding the style of delivery that is appropriate to gender and message), b) context-based self-positioning (whether the listener positions themselves alongside the reader or not) and c) context-based other-positioning (whether the listener identifies gender to be a relevant or irrelevant factor in relation to the topic). Also, research has found that in group situations information that was introduced by men was six times more likely to influence the group decision than information introduced by women (Propp 1995; Carli 2001). All of these internal and external factors may have implications for women's readings of the brief and choices of follow-up actions.

With regard to survey reporting behaviour, there could be a number of factors influencing gender differences. For example, education research (Bennett 1996; Furnham and Rawles 1999; Hogan 1978 cited by Mengelkamp and Jager 2007) suggests that girls and women tend to estimate their performance to be poorer than do boys and men, when comparing similar performances. When translated into survey response behaviour, this could mean that women would report a lower intention to carry out follow-up actions.[10] Other studies have shown that men's and women's self-reported past behaviours are influenced by their expectations of what is socially acceptable or socially empowering.[11] If men and women perceive different follow-up actions to be either appropriate or empowering based on their gender and social context (for example, *if* men perceive that they gain status by sharing knowledge items with others face-to-face, and *if* women perceive that they lose status by sharing knowledge items face-to-face) then when translated into survey response behaviour, this could mean that men boast higher rates of action and women are overly modest.

[9] Particularly for our study, it may be that male and female readers will respond differently to the tentative nature of the policy brief message, the gender of the author (where known) and the interaction of these two.

[10] Studies of gender effects in survey self-reporting show mixed outcomes, with women possibly over-reporting or under-reporting their behaviour compared to men depending on social expectations associated with the topic under scrutiny (e.g. potential under-reporting in surveys of sexual behaviour and potential over-reporting of healthy eating) and the method for data collection (e.g. a survey administered by a gendered interviewer or an electronic CATI survey).

[11] For example, Jonason (2007a, b, c, cited by Haavio-Mannila and Roos 2008) gives psychological explanations for men over-reporting sexual behaviour if not otherwise instructed. He suggests that men may gauge their own status by comparing themselves to other men in terms of how many sexual partners they have had. However, it is likely that the nature of men's and women's over- or under-reporting in surveys will be influenced by the social expectations associated with the specific topic under scrutiny. We are as yet unclear what the gender-related social expectations are for the range of actions explored in this study, and how they may differ based on cultural context and power/status of the actor. These are interesting areas for further investigation.

The level of education could have a number of (possibly offsetting) effects. While higher levels of education would tend to imply a higher exposure to, and understanding of, research, it could also make individuals more critical consumers of research evidence. Furthermore, very high levels of education such as a having PhD and beyond, would tend to be positively correlated with an academic position, which arguably would provide little room for any follow-up activities that translate more directly into policy influence.

A particularly interesting issue is whether people who perceive themselves to have a higher level of policy influence act in a different manner to others. Do they use different influence channels than others? Are they perhaps more prone to action in general? Rather than relying on traditional indicators of policy influence – job title and organisation – we developed a scale for self-reporting influence in a number of areas for two reasons: 1) we recognise that policy processes are non-linear and complex involving a number of actors inside and outside government, and 2) anecdotal evidence suggests that unexpected actors can have significant influence and would not be identified through job title and organisation. Further work is needed to interrogate the extent to which self-reported influence correlates with actual influence, or whether this indicator is picking up other traits such as a high internal locus of control. While this report does explore links between self-rated degree of influence and impact, the interpretation of this is complicated and should be approached with caution.

2 Methods

In short, the study used a multi-armed randomised controlled design to a) test the effectiveness of a policy brief overall for changing beliefs and prompting actions compared to a placebo policy brief delivered to a control group, and b) test whether different versions achieved greater or lesser effects.

2.1 Developing the treatments

In the summer of 2011, 3ie commissioned IDS Knowledge Services to work with them in developing a policy brief format for their new briefing series *Evidence Matters.* The first issue of *Evidence Matters* summarised a DFID funded systematic review of agriculture interventions that aim to improve the nutritional status of children.[12] Box 2.1 summarises findings of the systematic review, which is important background for understanding the results of the policy brief study.

Box 2.1 A policy brief summarising findings of a systematic review

The policy brief treatments at the heart of this study summarised findings of a DFID funded systematic review conducted by E. Masset, L. Haddad, A. Cornelius and J. Isaza-Castro in 2011.

The objective of the systematic review was to assess the effectiveness of food-based agricultural interventions, in particular bio-fortification, home gardens, fisheries, dairy development, and animal husbandry, in improving the nutritional status of children in developing countries.

The review finds that food-based agricultural interventions increase the production and consumption of the food promoted, and this leads to higher vitamin A intake (particularly for home garden interventions). However, the overall effects on income and consumption, taking into account the substitution effects in labour supply and consumption, remain unexplored by the existing studies. The review finds little or no impact on the nutritional status of children, but underlines that this finding may be due to the poor statistical power of the included studies and that further studies are required to draw conclusions on nutrition impact.

Three versions of the brief were developed to act as treatments for the study.

- Treatment 1: a basic 3-page policy brief. Testing for a policy brief effect.
- Treatment 2: the same basic 3-page policy brief as treatment 1, plus an opinion piece credited to and written by a sector expert, Lawrence Haddad, a co-author of the systematic review in question. Testing for an Authority effect.
- Treatment 3: the same basic 3-page policy brief and opinion piece as treatment 2, but the opinion piece was credited to an unnamed research fellow at IDS. Testing for an *opinion effect*.

[12] Masset *et al*. (2011).

An existing IDS publication from the *In Focus* policy briefing series was chosen as a placebo treatment for the control group. A placebo is a neutral treatment that has no 'real' effect on the dependent variable – in this case for example, on acquired knowledge on the topics covered in the agricultural brief. The main reason for choosing to include a placebo control was to be able to detect and control for any Hawthorne or survey effects, the former being an effect that results from the awareness of being studied,[13] rather than from the treatment *per se*, whereas the latter would be an effect induced by the fact that the surveyed individuals become more aware of issues raised in the questionnaire, such as their role in influencing change through follow-up actions. Finally, the placebo control was also intended to detect any external events beyond our control that might occur during the study, for example publication of a high profile study related to the knowledge topics in question.

We did not want to alert the placebo control group to their position in the study, and therefore the specific issue, *Priorities for Accelerating Progress on the* MDGs (Greeley and Gorman 2010), was selected because it had a similar format and length to the basic 2-page policy brief for all treatments, was published fairly recently and dealt with issues that while relevant to agriculture and nutrition did not specifically focus on these.

2.2 Identifying the study population and sample

A study population of over 75,000 people were emailed directly and invited to take part in the study. The study population was compiled from several contact lists held by the IDS Knowledge Services department and 3ie's own contacts database. Individuals had typically registered to receive one of three information products provided by IDS' Knowledge Services programmes: ID21,[14] Eldis[15] or BRIDGE.[16] In addition, the invitation was circulated through seven communities of practice that have an interest in research communication, evaluation and impact.[17]

Apart from the convenience of using existing contact lists, we assumed this study population would include people from diverse geographic and thematic interest areas; they were likely to be people who have some level of interest in research evidence and were likely to seek out and read policy

[13] In terms of the self-reported actions in the survey, we are not able to distinguish real actions from claimed actions by the individual; however, with the placebo control we should be able to control for both.
[14] ID21 produced *Insights,* a now discontinued research briefing series that provided a thematic overview on issues in international development. At the time of the study, ID21 contributed 17,446 contacts to the study population.
[15] Eldis is a searchable portal that provides free access to downloadable research and a number of subscribed to thematic and geographic products such as resource guides and country profiles. At the time of the study, Eldis contributed 50,518 contacts to the study population.
[16] BRIDGE is a gender-focused research and information programme that produces resources such as *Cutting Edge Packs* and *In Briefs*. At the time of the study, BRIDGE contributed 6,331 contacts to the study population.
[17] Research to Action blog, C4D network, EBPDN, 2 Eldis sub-communities (Results-based M&E Group, Manuals-Toolkits Readers' group), Pelican, Knowledge Brokers Forum blog, KM4Dev.

briefs as part of their usual practice. For example, the Eldis subscriber list (which contributed over 50,500 contacts for the study population) is an aggregated list of all subscribers to the 28 thematic and regional email newsletters (*Eldis Reporters*) currently available via the Eldis platform. The individual lists are of varying ages but many have been in operation for at least ten years. The lists are primarily used to send regular (usually monthly) email newsletters to subscribers detailing the latest development research included in that thematic area or regional profile.

Invitees were given just one week[18] to complete a baseline survey by way of signing up for the study. Invitees were advised of two incentives to take part:

- *'You will be contributing to valuable research that we hope will enhance the policy impact of all development research.'*
- *'And in addition, every time you complete a feedback questionnaire you will be entered into the draw to win one of 5 prizes of £100. There are three feedback questionnaires, so in total, 15 winners will each receive £100. If you win in the first round you can still complete future questionnaires – so if you are very lucky you could win up to £300.'*

A self-selecting sample of 807 people[19] responded to our invitation by completing the full baseline survey before the deadline. The sample is composed of highly educated people, with 60 per cent holding a masters degree and a further 20 per cent holding a PhD, equally distributed between male and female. Most participants are working in government and non-government institutions. Twenty per cent are in academia, while 60 per cent work for international aid organisations or NGOs. Eighty per cent of participants are aged between 25 and 55. Participants are from high-income countries based on the World Bank classification in 46 per cent of cases. Seventy-five per cent of the respondents engage with nutrition and agricultural issues in their work or research.

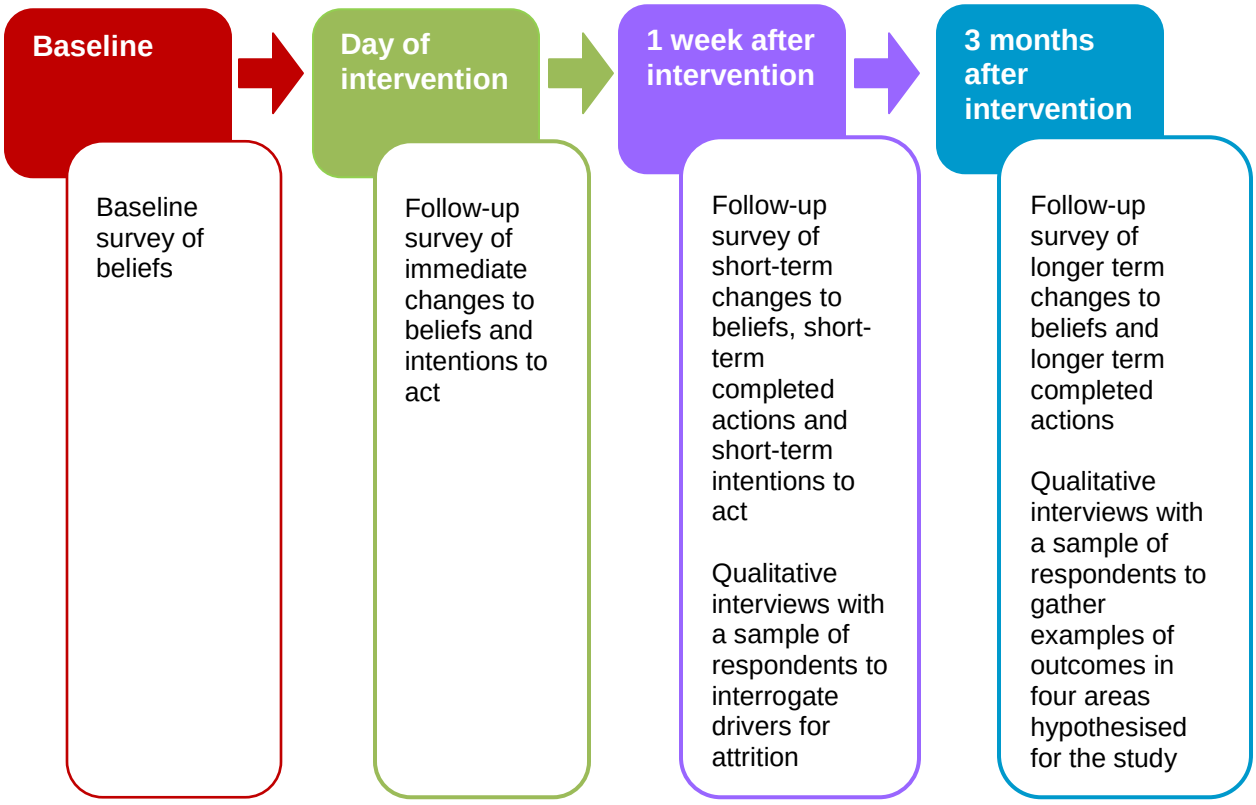
2.3 Random allocation to treatment groups

The self-selecting sample was randomly allocated to either the control group or one of the three treatment groups. First, a stratification was performed to increase the precision of the estimates. Eight strata were generated by crossing three categorisations: a) whether the respondent lives in a high-income country or a medium to low-income country, b) whether the respondent states that they

[18] We made the deadline short for three reasons: 1) we needed to move the project forward quickly if we were to ensure it did not collide with end-of-year holidays 2) we wanted to keep up the momentum with people who signed up and not allow a long lapse between sign-up and intervention 3) our experience shows that most people either respond immediately to this type of contact or not at all (this was borne out in this study also where more than half of our self-selecting sample signed up within 1 day of us sending out the invitation, and two thirds within 2 days).

[19] A further 164 surveys were started, but not completed in full, and were hence discarded from the experiment. These were discounted from the eligible sample. One hundred and sixty-four surveys does not represent 164 interested individuals, as many people started more than one survey before completing it in full. Three people submitted more than one complete survey.

Figure 2.1 Data collection points and methods



conduct research or work in the field of agriculture and nutrition, c) whether the respondent believes that they have an influence on decisions made by government on agriculture and nutrition made by the government (self-assessment on a scale from 0 to 10, half of the respondents rated their influence between 0 and 2 which was used as a cut-off point to create this category). Second, a random number was generated for each observation drawing from a uniform distribution using the strata software. The sampling programme was be set in such a way that the random selection can be exactly replicated. Finally, observations were sorted by the random number within each stratum and observations within each stratum were sequentially assigned to each of the four groups.

2.4 Administering the treatment

The control and treatment groups were contacted by email and provided with a link to the relevant communication intervention for their group. Participants were expected to follow the link, download the pdf document (or open it in their web browser) and read it in full. This was the only intervention undertaken for the study. All other communication with participants was for the purpose of administering data collection, awarding prizes or responding to specific queries.

2.5 Data collection tools

The primary data collection instrument for the study consisted of four online questionnaires built using SurveyMonkey[20]. The questionnaires were largely quantitative and included both newly developed question formats and established question formats used by IDS elsewhere (Figure 2.1). In addition, qualitative interviews were carried out with a purposive sample of participants at two stages in the study:

Semi-structured telephone interviews were undertaken with 34 participants at two points in time:

- *In between the 1-week and 3-month questionnaires*. Ten semi-structured interviews to explore the reasons for the high attrition rate. Further details about the methods and findings for the round 1 qualitative interviews can be found in Appendix 1.
- *After the 3-month follow-up questionnaire*. Twenty-four semi-structured interviews to gather examples of outcomes in four areas that had been hypothesised for the study: Belief, Behaviour – sharing information, Behaviour – seeking information, Behaviour – other action. Further details about the methods and findings for the round 2 qualitative interviews can be found in Appendix 2.

[20] SurveyMonkey is a popular online surveying tool – www.surveymonkey.com.

2.6 Attrition

Participation in the study decreased considerably over the three follow-up rounds. Only 50 per cent of the original sample participated in the first follow-up, a further 36 per cent dropped out at the 1-week follow-up. Finally, a further 11 per cent dropped out before the 3-month follow-up. There could be a number of reasons for high attrition:

- Time of year – the study fell over the summer months for Northern hemisphere countries, and we received a lot of out-of-office replies from people taking a summer break. It is difficult to identify a suitable time for a four-month study with international respondents that will not prove inconvenient for some.
- Spam and junk mail filters, incorrect email addresses – we suspect that spam and junk mail filters were preventing some of our emails reaching signed-up participants. This is likely a common problem for studies conducted online.
- Participant fatigue – four participants notified us that they were intentionally withdrawing from the study because they found it demanding and repetitive. It is possible others dropped out for similar reasons and did not advise us of this. Although no such feedback was gleaned from telephone interviews.
- Participant error, confusion – we suspect that in many cases participants simply 'missed' the email about the study in their inbox or assumed that it referred to a survey they had already completed. This suspicion was reinforced by telephone interviews and unsolicited emails from several participants claiming they had already completed a particular questionnaire.

Attrition may also reflect a selection bias, which is discussed below.

2.7 Data analysis

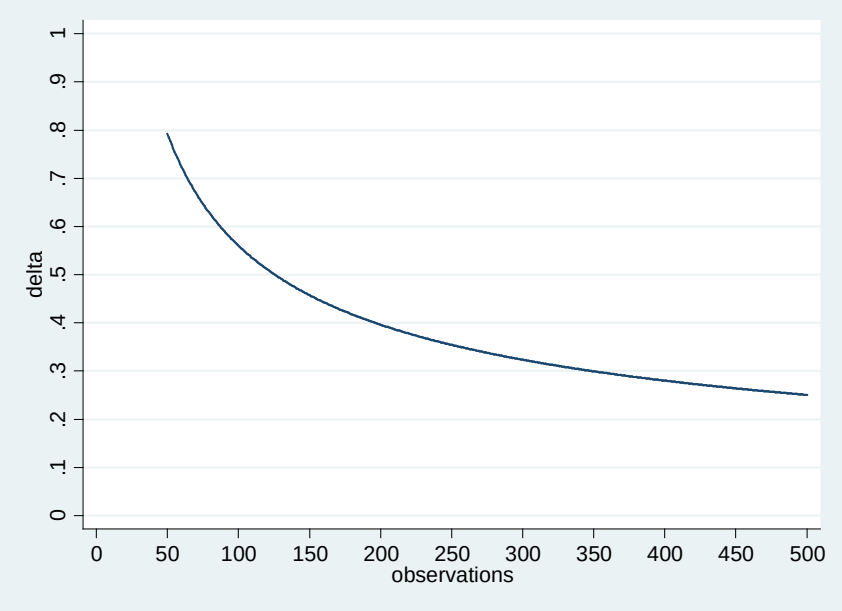
Statistical power is the probability of finding an effect when there is an effect. Statistical power is irrelevant if a statistical difference is found. But it is relevant if no difference is found because the reason for not finding the difference could be that the size of the sample used was too small.

Figure 2.2 shows the standardised minimum detectable difference between averages in a project and control group over total sample size. For example, a comparison between 2 groups of 200 observations each (a total of 400 observations) corresponds to a standardised difference of .3. A comparison between two groups of 100 observations each corresponds to a standardised difference

of 0.4. This means that a total sample of 200 observations of which half are assigned to the intervention will able to detect differences equal or above .4 standard deviations. These values are calculated assuming an alpha of 5 per cent and a power of 80 per cent.

Most baseline outcome variables on beliefs and knowledge are measured on a scale from 0 to 5 and have standard deviations between 1 and 1.5. If we accept that the population variance is similar to the sampled variance, we find that a sample of 200 observations should be able to detect average differences between groups (for a variable scaled 0 to 5) of the order of 0.4–0.7. For example, if the average in the control group is 2.5 the sample should be able to detect a change in the project group starting from 2.9–3.2 but smaller changes are unlikely to be detected. Note that these estimates are conservative because we stratified the sample on a number of variables that were highly correlated with responses: residence in a high-income country, self-assessed influence on policy, and experience in conducting research or work in the subject area. Precision is increased by minimising the between-groups differences in these variables that affect the outcomes.

Figure 2.2 Standardised minimum detectable difference and sample size



We calculated averages of a series of characteristics and outcome indicators for the four groups (see Table 2.1). The p-value of an F-test is reported to assess the equality of the characteristics at the baseline. In principle, this test is redundant. The purpose of a statistical test is to assess whether the observed difference in the averages is a real difference in the population or is the result of chance. But

in our case the difference is the result of chance by construction because people were assigned to the four groups randomly. Therefore significance test really tests whether anything went wrong at the randomisation stage. By looking at the data it is not the case.

What really matters is whether the four groups are very different in characteristics or baseline outcomes. Background characteristics such as age, gender and education are evenly distributed across the group as well as beliefs about RCTs, systematic reviews and knowledge of Haddad and Sturman.[21] Similarly, there are no large differences in beliefs regarding programme effectiveness, evidence about effectiveness of the interventions and strength of this evidence.

Table 2.1 Comparison of means for the four groups at baseline

	Control	T1	T2	T3	F-test
% Female	46.3	44.3	55.4	47.0	0.119
Age group	3.4	3.3	3.2	3.2	0.592
Education group	6.1	6.0	6.1	6.0	0.179
% believes RCT are strong	72.2	66.7	69.0	69.0	0.733
% believes SRs are strong	85.9	81.7	85.7	85.9	0.583
% knows L Haddad	23.1	21.7	19.8	21.3	0.878
% knows A Sturman	4.4	5.4	3.0	5.9	0.511
% believe intervention is effective					
Bio-fortification	31.5	29.0	30.2	34.7	0.651
Breastfeeding	85.7	77.8	81.7	81.2	0.238
CCT	34.0	32.2	30.2	34.7	0.773
UCT	15.3	16.7	15.3	19.3	0.671
Dairy development	45.3	41.9	51.5	41.6	0.159
De-worming	63.5	58.6	63.9	64.4	0.605
Home gardens	64.5	58.6	70.3	60.4	0.071*
Small fisheries	51.2	46.8	51.0	52.0	0.723
% does not know about evidence about					
Bio-fortification	51.7	55.7	52.0	55.9	0.736
Breastfeeding	16.7	21.7	19.3	19.8	0.659
CCT	42.4	34.0	37.1	29.2	0.044**

[21] Antony Sturman is the fictitious sector expert we included in the study to identify potential over-reporting.

UCT	43.8	42.9	42.6	36.6	0.445
Dairy development	43.3	45.8	38.1	43.6	0.453
De-worming	36.5	38.4	34.2	37.6	0.826
Home gardens	32.0	36.5	26.7	33.2	0.209
Small fisheries	40.9	41.4	44.6	38.6	0.684
Assessed strength of evidence about (scale from 1 to 4)					
Bio-fortification	2.47	2.69	2.54	2.67	0.273
Breastfeeding	3.53	3.46	3.45	3.51	0.716
CCT	2.47	2.44	2.40	2.36	0.800
UCT	2.03	2.07	2.16	2.07	0.719
Dairy development	2.78	2.69	2.77	2.77	0.863
De-worming	3.19	3.14	3.08	3.10	0.745
Home gardens	2.88	2.94	2.83	2.76	0.445
Small fisheries	2.65	2.66	2.79	2.64	0.637
Total observations	203	203	202	202	

2.8 Study limitations

The study has a number of limitations that restrict the extent to which we can generalise findings to a wider population. Four limitations are discussed below.

1. *Selection bias*

There are two problems of selection bias connected with the survey. The first bias arises from self-selection of respondents into the survey. We have very limited information about the extent to which our sample is representative of the wider study population for two reasons. Firstly, no comprehensive study of the full study population has ever been completed. Secondly, previous surveys of contact lists held by IDS' Knowledge Services have also relied on self-selection and are therefore likely to contain similar biases to our own study. This means that the findings are not valid for the general population, nor (we suspect) for the list of subscribers to the IDS Knowledge Services contact databases from which they were drawn, since those who self-selected to participate in the study are likely to differ from those who didn't participate on unobservable characteristics, such as interest in research, and/or knowledge of nutrition-related research.

The second bias arises from differential attrition among the survey groups during the survey rounds. Only 50 per cent of the original sample participated in the immediate follow-up, and a further 20 per cent dropped-out at the 1-week follow-up. Finally, 3 per cent of the sample dropped out at the 3-

month follow-up. Retention rates are similar across the four intervention groups across survey rounds. This suggests that the second bias resulting from differential attrition between groups should not be very large.

Selection bias may affect the results of the study in a number of ways. Suppose that people with stronger prior opinions on the topic are more likely to join the study and to remain in the study over survey rounds. The bias consists of underestimating the impact of the intervention, because people less likely to change their opinion are joining and remaining in the survey. Suppose instead that people who joined the study have a more positive attitude towards research information. They may be more inclined to engage with the message and more open minded towards the content of a policy brief. In any case, selection bias means the findings are not generalisable to the wider population.

2. Reliance on self-report

All of the action data relies on self-report, and most cannot be verified through external observations. It is possible that respondents may have 'boasted' higher levels of completed actions than they had actually carried out; perhaps to appear consistent with their previously reported intended actions (if they remembered these) or perhaps simply to appear active. There is no reason to believe respondents would have been particularly inclined to over-reporting actions in this study, and the fact that respondents reported lower levels of activity for actions that required higher levels of effort is reassuring. Qualitative interviews with a sample of respondents (discussed in Appendix 2) did not identify any over-reporting but did identify some under-reporting of actions. Nonetheless, findings based on self-reported actions should be treated with caution.

3. A unique treatment

What is particular for the evidence presented in the policy briefs at the core of this study, but not that unusual for systematic reviews in general, is that the evidence is not conclusive and hence not highly actionable (except for the common conclusion that more research is needed). It may be that a policy brief based on a more conclusive study with directive and actionable recommendations may have achieved different results.

4. Relevance to a 'real world' situation

In a 'real world' situation, few research organisations would rely on a policy brief alone to influence their key target audiences and would instead use a policy brief as one tool in a multi-pronged influencing approach. Nonetheless, most research organisations *do* put their policy briefs into the public domain on websites and in hard copy where they can be (and are) read as a standalone resource by any interested actor. While they may be on the periphery of most influencing strategies,

these actors are many and varied and they have potential to be influenced by research communications, and potential to go on to influence policy and practice in previously under-explored ways. Our study represents a pioneering effort to expand our understanding of the effectiveness of a policy brief as a standalone tool, and provides some insights that could help research communicators to develop effective policy briefs and to stimulate peripheral actors to keep their ideas in circulation and broker their knowledge going forward.

2.9 Lessons from the study design

To the best of our knowledge this is the first study of its kind. As such, while we were able to draw on our own and other people's experiences studying belief and behaviour change, there was no 'template' approach we could follow. Some of our design decisions proved useful. For example:

- in the 'beliefs' section of the surveys we asked about a range of interventions, including some that were not mentioned in the policy brief (e.g. conditional cash transfers). This helped us to test for survey effects.
- we asked respondents at baseline about their knowledge of a number of experts in the nutrition field, including Lawrence Haddad (the named author of the opinion piece) and Anthony Sturman (a fictitious name invented for the study). Asking about knowledge of Haddad allowed us to test for more nuanced relationships in the Authority effect. And asking about knowledge of Anthony Sturman allowed us to test for 'boasting' by survey respondents.
- we asked about respondents' self-perceived level of influence in a number of areas. This information has potential to allow us to develop a more nuanced understanding of the links between role, organisation and influence.

And some of our design decisions led to limitations in the study. For example,

- in the 'actions' section of the survey all questions asked about self-reported behaviour. While self-reported behaviour is easier and cheaper to collect than observed behaviour it is very difficult to validate.
- in the first follow-up survey (the immediate survey), we asked respondents about their intentions to act, and in the latter two follow-up surveys (1 week and 3 months after the intervention) we asked about completed actions. By asking about 'intended' actions we may have inadvertently increased the likelihood that respondents would act (some practitioners in the training sector suggest that declaring an intention increases likelihood that an action will be carried out). And, by asking about 'intended' actions before asking about 'completed'

actions we may have inadvertently encouraged respondents to exaggerate their actions so as to appear to have followed through.

We encountered a number of issues throughout the study that made it difficult to communicate effectively with participants. These issues are likely to have contributed to the high rates of attrition. For example, spam filters prevented emails from being delivered, website failures meant some people couldn't access the treatments, and the time of year coincided with summer holidays in the Northern hemisphere.

While the study was relatively small in scale and in budget[22] it was proportionately a considerable investment for evaluating a single policy brief. A greater budget is unlikely to have improved attrition, but it may have allowed us to verify self-reported actions, for example. While we have established that the effectiveness of research communication tools can be evaluated through an experimental study design, we would not recommend this approach as standard for evaluating all research communication activities. However, we would recommend further targeted studies to legitimise the significant spending on research communication approaches, to improve our understanding about what works in what situation to achieve research uptake and finally to further improve our knowledge about how best to evaluate complex processes of influence.

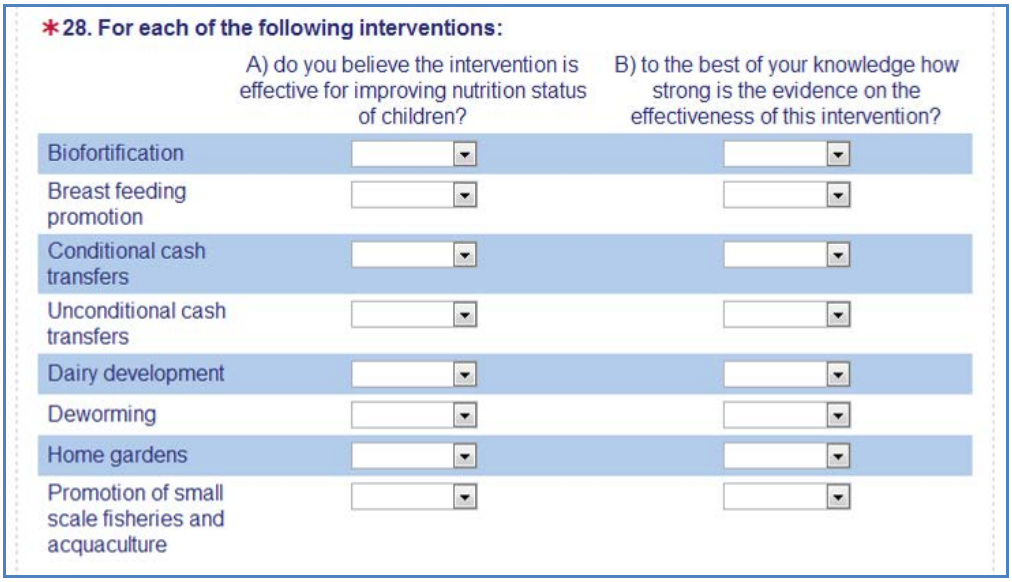
[22] 3ie funded IDS £28,500 to complete the study, which included £1,500 prize money to incentivise participants. The budget is not a true reflection of the study cost as it does not include time required to a) develop the policy brief treatments, or b) time contributed by non-IDS co-authors to undertake analysis and reporting, which was considerable.

3 Results

3.1 What impact did the policy brief intervention have on readers' beliefs?

Study participants were asked at baseline, and in follow-up surveys to rate the strength of evidence and effectiveness of a number of policy interventions for improving the nutrition status of children (Figure 3.1).

Figure 3.1 Survey questions to capture beliefs



Two survey scales were used, and responses coded as follows:

- A) Effectiveness of intervention: Yes (3) / Sometimes (2) / No (1) / Don't know (0)
- B) Strength of evidence: Very Strong (4) / Strong (3) / Average (2) / Weak (1) / Don't know (0)

The policy brief increases the proportion of respondents who have an opinion about the strength of evidence and effectiveness of bio-fortification and home gardens

We consider the impact on ratings of strength of evidence and effectiveness of two interventions: bio-fortification and home gardens.[23] The first is a new intervention of which little is known; the second is a well-known intervention. Based on the systematic review we would rate the evidence on

[23] The study also explored dairy development and small fisheries. For simplification, we only explore two policy interventions here.

the effectiveness of bio-fortification as weak (code 1) and of home gardens as average (code 2). We would also rate the effectiveness of these interventions as 'sometimes' positive (code 2) because of the limited evidence and of the little evidence in favour of a positive impact of these interventions. We would expect both the number of people having an opinion and the type of opinion to change between the baseline and the follow-up survey as a result of the policy brief. Our expectations are therefore that:

- more people know about evidence and effectiveness of home gardens than bio-fortification;
- the ratings of strength of evidence should be below or around 'average' (code 2) for bio-fortification and home gardens;
- that at the baseline the variance on the effectiveness ratings of bio-fortification is larger than the variance for home gardens (because as people have access to more information they are more likely to have similar opinions);
- the distribution of evidence and effectiveness ratings should change between the baseline and the follow-up.

Figure 3.2 Proportion of respondents reporting a belief regarding strength of evidence for bio-fortification and home gardens before and after intervention (DK = don't know, K = an opinion is stated)

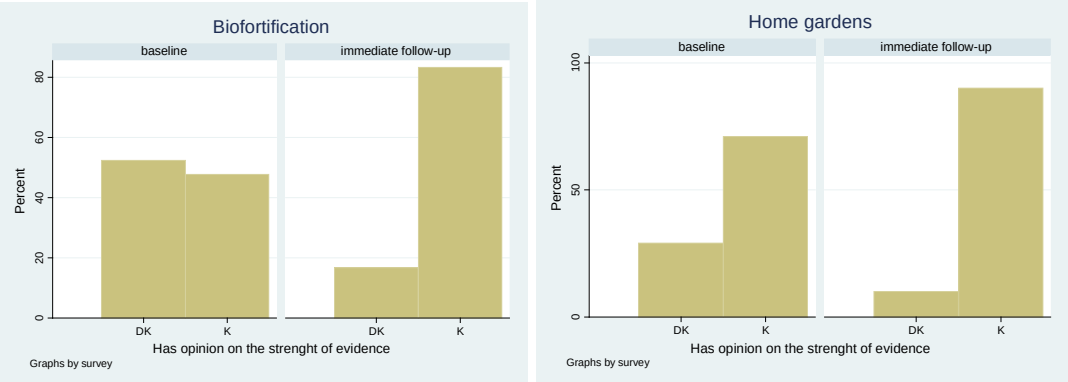


Figure 3.3 Proportion of respondents reporting particular beliefs regarding the strength of evidence for bio-fortification and home gardens before and after intervention

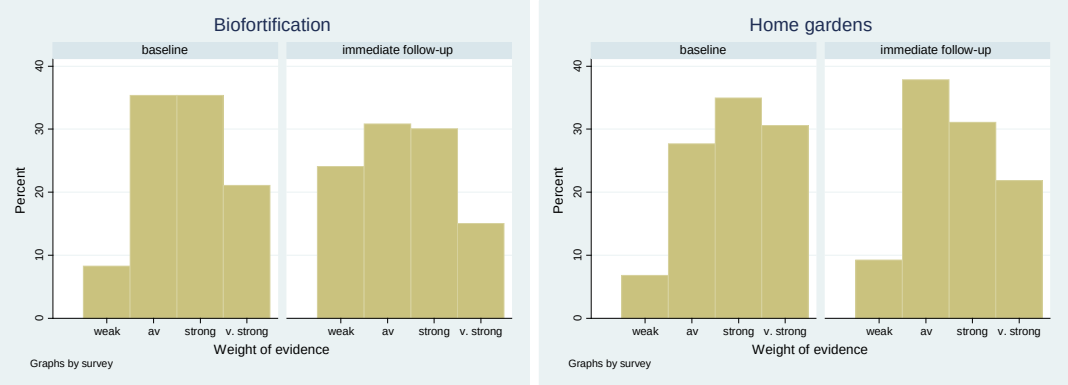


Figure 3.4 Proportion of respondents reporting a belief regarding the effectiveness for bio-fortification and home gardens before and after intervention (DK = don't know, K = an opinion is stated)

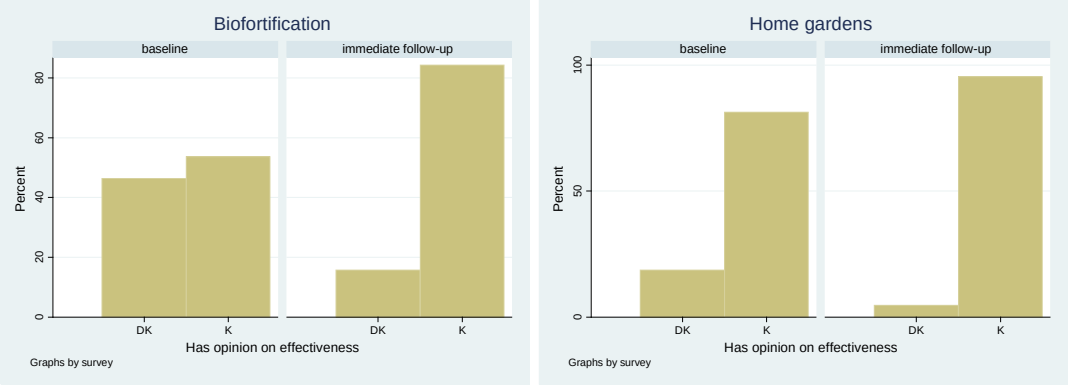
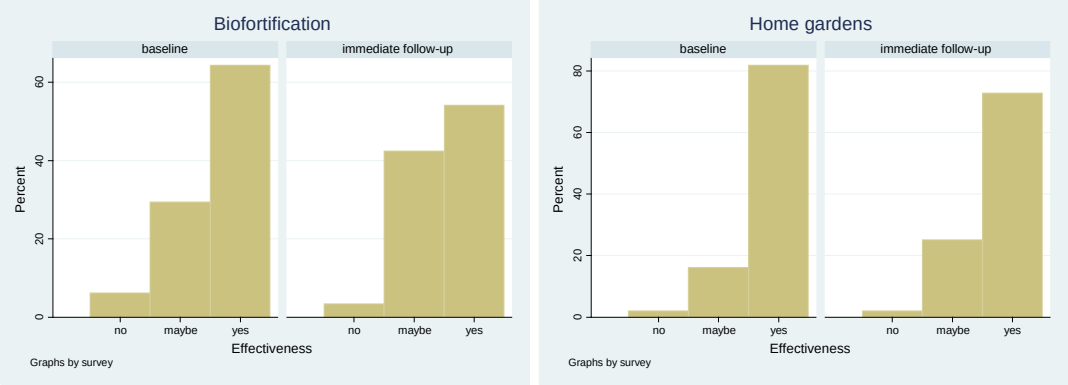


Figure 3.5 Proportion of respondents reporting particular beliefs regarding the effectiveness of bio-fortification and home gardens before and after intervention



Most of our expectations are confirmed:

- More people have an opinion about the strength of evidence and about the effectiveness of home gardening interventions compared to bio-fortification.
- People have overly high expectations about the strength of evidence and the effectiveness of the intervention than the systematic review suggests. About half of the sample rate strength of evidence and effectiveness as 'strong' and 'very strong'.
- Less information and more uncertainty increases the variability of responses. The baseline variance of the distribution of effectiveness ratings of bio-fortification is larger than the variance of home gardens (0.41 versus 0.22).
- The policy brief has the effect of increasing the number of people having an opinion about both evidence strength and effectiveness.
- The policy brief has the effect of reducing the ratings of both evidence strength and effectiveness.

There are a small number of participants who had an opinion at the baseline but no longer so at the follow-up. This might suggest that the effect of the intervention for these respondents was to bring uncertainty and that these respondents lost confidence in their prior beliefs. This is indeed possible but the number of these respondents and the resulting effect size is so small (less than 10 respondent and less than 3 per cent of the sample) as to be irrelevant.

The policy brief is more effective in creating evidence-accurate beliefs among respondents with no priors, than changing beliefs of respondents who already have an opinion

The policy brief has the effect of reducing evidence and effectiveness ratings. However, this effect was calculated for all people having an opinion at either the baseline or the follow-up. But some people formulated an opinion between the two surveys. It becomes of interest to see what is the absolute size of the ratings of those who had an opinion at the baseline compared to those who formulated an opinion between the two surveys. Our expectation is that those having an opinion at the baseline are more likely to preserve their opinion after the policy brief while those formulating an opinion after the policy brief are more likely to assign ratings similar to those suggested by the brief. In other words, those who formed an opinion after reading the policy brief should assign lower ratings to effectiveness and evidence than those having an opinion before reading the policy brief. In order to test this we build a transition matrix for the ratings between the two surveys.

Table 3.1 Transition matrices showing beliefs about the strength of evidence for bio-fortification and home gardens (average ratings in the cells) (DK = don't know, K = an opinion is stated)

	Bio-fortification		Home gardens	
	DK at follow-up	K at follow-up	DK at follow-up	K at follow-up
DK at baseline	-	1.9	-	2.0
K at baseline	2.6	2.7 changes to 2.4	2.0	2.9 changes to 2.6

Table 3.2 Transition matrices showing beliefs about the effectiveness of bio-fortification and home gardens (average ratings in the cells) (DK = don't know, K = an opinion is stated)

	Bio-fortification		Home gardens	
	DK at follow-up	K at follow-up	DK at follow-up	K at follow-up
DK at baseline	-	2.3	-	2.5
K at baseline	2.2	2.6 changes to 2.5	1.0	2.8 changes to 2.7

Most expectations are confirmed. People forming their first opinion in between the surveys assign lower ratings to both effectiveness and evidence. People having an opinion at baseline downgrade their ratings after the policy brief but still have larger average ratings than those forming an opinion after reading the policy brief. The change in ratings is larger for evidence than for effectiveness. In conclusion, much of the change in average ratings between the two surveys is produced by the low ratings of those forming their first opinion after reading the policy brief rather than by those with an opinion at baseline changing their opinion. A lower rating reflects a more cautious view about the strength of evidence and effectiveness of these interventions, which is in keeping with the messages in the policy brief.

High attrition rates prevent us from drawing conclusions about persistence of changes in beliefs

We undertook a difference in difference analysis over four survey rounds to explore the extent to which changes in beliefs persist. The analysis only includes those individuals who answered all four surveys, and the resulting cohorts are too small for us to draw any conclusions (tables are presented in Appendix 3).

Retention rates are similar across the four intervention groups, suggesting differential attrition should not bias results

There are two problems of selection bias connected with the survey. The first bias arises from self-selection of respondents into the survey. The second bias arises from differential attrition among the survey groups during the survey rounds.

Suppose that people with stronger prior opinions on the topic are more likely to join the study and to remain in the study over survey rounds. Suppose that people with stronger priors are also less likely to change their opinion as a result of the intervention. The first bias consists of underestimating the impact of the intervention, because people less likely to change their opinion are joining and remaining in the survey. Because of this bias the results do not apply to the wide population of potential readers of the policy brief. People with weaker priors would have changed their opinion more easily had they participated in the survey. The second bias may underestimate or overestimate the impact of the intervention in each intervention group if retention rates are correlated with determinants of the outcomes. Different policy briefs can retain people in different ways and the group end up being composed of people with a different likelihood of changing their opinions.

In order to test these hypotheses we look at attrition rates over survey rounds and at how they correlate with individual characteristics and prior beliefs. The table below shows the attrition rates over the four survey rounds. Only 50 per cent of the original sample participated in the follow-up, and a further 20 per cent dropped-out at the 1-week follow-up. Finally, 3 per cent of the sample dropped out at the 3-month follow-up. Retention rates are similar across the four intervention groups across survey rounds. This suggests that the second bias resulting from differential attrition between groups should not be very large.

Table 3.3 Attrition rates across the control and treatment groups, and across the four surveys

	Control – placebo brief	T1 – Basic brief	T2 – Authority opinion piece	T3 – opinion piece by unnamed author	ALL
Baseline	202	203	201	201	**807**
Immediate follow-up	104	106	99	103	**412**
Retention rate	*0.51*	*0.52*	*0.49*	*0.51*	***0.51***
1-week follow-up	61	67	63	71	**262**
Retention rate	*0.30*	*0.33*	*0.31*	*0.35*	***0.32***
3-month follow-up	59	55	55	64	**233**
Final retention rate	*0.29*	*0.27*	*0.27*	*0.32*	***0.29***

Prior beliefs of attritors are not significantly different from those who stay in the study, but attritors are more likely to have particular characteristics which may bias the findings

The sample is composed of highly educated people, with 60 per cent holding a masters degree and a further 20 per cent holding a PhD, and equally distributed between male and female. Most participants are working in government and non-government institutions. 20 per cent are in academia, while 60 per cent work for international aid organisations or NGOs. 80 per cent of participants are aged between 25 and 55. Participants are from high-income countries based on the World Bank classification in 46 per cent of cases. 75 per cent of the respondents engage with nutrition and agricultural issues in their work or research.

We tested the differences in prior beliefs of attritors and non-attritors between the immediate follow-up and the baseline and between the 3-month follow-up and the baseline. Similarly, we tested differences in baseline characteristics of attritors and non-attritors at immediate follow-up and 3-month follow-up.

Table 3.4 Differences in prior beliefs between attritors and people who stay in the study at immediate follow-up and 3-month follow-up

	Immediate follow-up		3-month follow-up	
	Attritors	Non-att.	Attritors	Non-att
Knowledge of strength of evidence for bio-fortification	0.43	0.49	0.45	0.49
Rating of strength of evidence for bio-fortification	2.5	2.6	2.6	2.6
Knowledge of effectiveness of bio-fortification	0.50	0.55	0.51	0.57
Rating of effectiveness of bio-fortification	2.5	2.5	2.5	2.5
Knowledge of strength of evidence for home gardens	0.65	0.70*	0.68	0.67
Rating of strength of evidence for home gardens	2.8	2.9	2.8	2.8
Knowledge of effectiveness of home gardens	0.78	0.80	0.79	0.79
Rating of effectiveness of home gardens	2.7	2.8	2.8	2.8

Attritors are less knowledgeable of the topics of the review and tend to assign lower ratings to both evidence and effectiveness, but the differences are never statistically significant.

Table 3.5 Determinants of attrition

	Immediate follow-up		3-month follow-up	
	sign	significance	sign	significance
Female respondent	-		-	
Age	-		-	
Academic	+		-	
Working in aid	+		+	*
Higher education	-	*	-	
Engages with agriculture/nutrition through work	-	**	-	*
Self-assessed influence on policymaking	+		+	
High-income country	+		-	

Of the potential determinants of attrition considered, only higher education, self-assessed knowledge about agriculture and work in a government or non-government aid agency seem to be correlated with attrition. High education and knowledge in particular decrease the probability of attrition. A similar mechanism might well have operated in the selection of the baseline sample from the population of potential respondents. There is some sign that the sample is composed of people with good knowledge of agriculture and nutrition. These people are also likely to be those with higher attachment to their beliefs.

We found little variation in the profile of attritors across the control and intervention groups, with the exception of T1 (who received the basic policy brief).

Table 3.6 Differential attrition determinants

	Control – placebo brief		T1 – Basic brief		T2 – Authority opinion piece		T3 – opinion piece by unnamed author	
	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value
Female respondent	-0.06	0.74	0.39*	0.06	-0.23	0.25	-0.01	0.98
Age	-0.01	0.93	0.03	0.70	-0.17**	0.04	-0.08	0.30
Academic	0.19	0.45	0.61**	0.03	-0.18	0.48	-0.67**	0.01
Working in aid	0.33	0.13	0.37*	0.09	0.24	0.29	-0.05	0.83
Higher education	-0.12	0.86	0.15	0.75	-0.01	0.99	-0.60	0.33
Engages with agriculture /nutrition in work	-0.37*	0.10	0.00	0.99	-0.42*	0.08	-0.04	0.86
Self-assessed influence on policymaking	0.32	0.11	0.03	0.87	-0.02	0.93	0.11	0.57
High-income country	-0.01	0.95	-0.19	0.36	-0.15	0.47	-0.03	0.86
Constant	0.67	0.38	0.01	0.99	1.66	0.03	1.47	0.05

Quality ratings of the intervention and placebo policy briefs were high, with little variation between the intervention briefs

There are two quality issues related to the policy brief. The first is its objective quality, that is its correct and effective representation of the results of the systematic review. The second issue is the quality as it is perceived by the respondents. We deal here with the second issue.

The respondents rated the quality of the policy brief on a number of dimensions. Ratings are in general high and slightly higher for the policy brief sample with a few exceptions. We tested the differences between the two groups using the standard t-test. We also tested the difference in mean ratings between the three groups receiving the policy brief using an F-test.

Table 3.7 Difference in mean ratings of the intervention and placebo policy briefs

	Intervention versus placebo	Within intervention policy briefs
	T-test	**F-test**
The argument is convincing	.12	0.22
The methodology is robust	.43***	0.05
Balance of details	-.04	0.02
Clarity of message	-.15	0.39
Clarity of recommendations	-.09	0.39
Relevance to my work	-.28**	0.47
Strength of evidence	.50***	2.51*

In the comparison between the policy brief and the placebo groups, the differences on a 5-grade scale are rather small and are significant in only two cases: the robustness of the methodology and the strength of the evidence used. No difference in ratings emerges between different policy briefs, with a small exception in the case of the strength of evidence.

The policy brief has some significant effects on proportion of respondents who have opinions about the strength of the evidence of the four main interventions discussed in the brief, but only on the opinion about effectiveness when it comes to bio-fortification.

In order to obtain standard errors and significance tests for the difference in difference estimator we run regressions of the outcome variables on time, strata dummies, treatment status and the interaction of time and treatment status. In these regressions the constant is the mean in the control group at baseline, time is the difference between baseline and follow-up for the control group, treatment is the difference between project and control group at baseline, and DD is the difference in difference estimator, the impact of the intervention.

We run regression between the baseline and the immediate follow-up using only data for those respondents that participated in the follow-up survey.

Table 3.8 Difference in difference between baseline and immediate follow-up survey

	Bio-fortification		Home gardens	
	coefficient	**P-value**	**coefficient**	**P-value**
		Has opinion about evidence		
Constant	0.28***	0.000	0.48***	0.000
Time	0.08	0.710	0.02	0.710
Treatment	-0.07	0.984	0.01	0.984
DD	0.27***	0.000	0.17***	0.000
		Evidence ratings		
Constant	2.89***	0.000	2.98***	0.000
Time	0.08	0.130	-0.05	0.490
Treatment	-0.07	0.843	-0.03	0.638
DD	0.27	0.965	-0.04	0.655
		Has opinion about effectiveness		
Constant	0.48***	0.000	0.76***	0.000
Time	0.82	0.186	0.10**	0.021
Treatment	-0.07	0.192	0.01	0.828
DD	0.22**	0.002	0.04	0.473
		Effectiveness ratings		
Constant	2.96***	0.000	2.98***	0.000
Time	0.00	0.999	-0.05	0.490
Treatment	0.07	0.436	-0.03	0.638
DD	0.22	0.569	-0.04	0.655

Table 3.9 Difference in difference between baseline and immediate follow-up survey

	Dairy development		Small-scale fisheries	
	coefficient	**P-value**	**coefficient**	**P-value**
		Has opinion about evidence		
Constant	0.48***	0.000	0.49***	0.000
Time	0.09	0.123	-0.02	0.738
Treatment	0.05	0.271	-0.01	0.908
DD	0.11*	0.099	0.20**	0.004
		Evidence ratings		
Constant	3.44***	0.000	2.72***	0.000
Time	-0.04	0.824	-0.15	0.419
Treatment	-0.15	0.296	0.07	0.684
DD	-0.03	0.868	-0.10	0.658
		Has opinion about effectiveness		
Constant	0.59***	0.000	0.75***	0.000
Time	0.12**	0.023	0.05	0.145
Treatment	0.06	0.175	0.02	0.714
DD	0.07	0.290	0.12	0.876
		Effectiveness ratings		
Constant	2.79***	0.000	2.60***	0.000
Time	-0.03	0.745	-0.15	0.145
Treatment	-0.11	0.178	0.03	0.714
DD	0.07	0.534	0.02	0.876

The regression results show that:

- the policy brief increases the fraction of respondents with an opinion with respect to strength of evidence by between 11 and 27 per cent points;
- the policy brief is not found to have a significant effects on the average evidence ratings;
- the policy brief increases the proportion of respondents with an opinion about the effectiveness of bio-fortification only by 22 per cent.

In order to control for potential survey effects or underlying differences in changes between project and control groups, we also included policies in the survey for which there was no information in the brief, and were hence able to carry out a 'placebo test'. The placebo policies were conditional cash transfers, breastfeeding and de-worming. The brief should have no impact on these policies.

Table 3.10 Difference in difference between baseline and immediate follow-up survey

	Breastfeeding		CCT		De-worming	
	coefficient	**P-value**	**coefficient**	**P-value**	**coefficient**	**P-value**
Has opinion about evidence						
Constant	0.64	0.000	0.40	0.000	0.75	0.000
Time	0.07	0.125	0.08	0.194	0.02	0.723
Treatment	-0.01	0.886	0.07	0.148	-0.01	0.936
DD	-0.02	0.728	-0.01	0.973	0.05	0.491
Evidence ratings						
Constant	2.53	0.000	3.94	0.000	3.14	0.000
Time	-0.09	0.619	-0.21	0.271	0.08	0.723
Treatment	0.11	0.466	-0.16	0.299	-0.09	0.936
DD	0.09	0.688	0.15	0.498	0.01	0.491
Has opinion about effectiveness						
Constant	0.88	0.000	0.70	0.000	0.75	0.000
Time	-0.05	0.128	0.07	0.214	0.02	0.723
Treatment	0.02	0.477	0.06	0.206	-0.01	0.936
DD	0.01	0.963	-0.02	0.816	0.05	0.491
Effectiveness ratings						
Constant	1.50	0.000	2.76	0.000	2.00	0.000
Time	-0.22	0.619	-0.07	0.656	-0.10	0.568
Treatment	0.07	0.466	-0.01	0.967	-0.03	0.828
DD	0.09	0.688	0.01	0.976	0.10	0.619

As can be seen in Table 3.10, we find no effects on CCT and other programmes, confirming that the effects found on the other nutrition programmes, mainly on opinions about strength of evidence, are real.

The impact of the policy brief seems to be independent of the specific form of the policy brief. We ran regression calculating different DD estimators for each of the policy brief versions. An F-test assesses the statistical significance of the differences between the three DD estimators. Coefficients of the three DD estimators are very similar. Treatment number three (the policy brief with an opinion piece attributed to an unnamed author) seems to have a stronger impact for bio-fortification outcomes, while treatment number two (the policy brief with an opinion piece attributed to a named

author – Lawrence Haddad) seems to have a weaker impact in the case of home gardens outcomes. None of the differences observed between the three DD estimators is statistically significant by the F-test. In other words, the impact of the policy brief seems to be independent of the specific form of the policy brief.

Table 3.11 Changes in belief for different policy brief treatments

	Bio-fortification		Home gardens	
	coefficient	P-value	coefficient	P-value
		Has opinion about evidence		
DD T1 – Basic	0.24**	0.009	0.19**	0.015
DD T2 – Authority opinion piece	0.23**	0.014	0.08	0.340
DD T3 – opinion piece by unnamed author	0.27**	0.002	0.18**	0.024
F-test (P-value)		0.854		0.299
		Evidence ratings		
DD T1 – Basic	-0.44*	0.065	-0.24	0.272
DD T2 – Authority opinion piece	-0.67**	0.007	-0.16	0.451
DD T3 – opinion piece by unnamed author	-0.46*	0.062	-0.13	0.553
F test (P-value)		0.579		0.869
		Has opinion about effectiveness		
DD T1 – Basic	0.17**	0.048	0.07	0.285
DD T2 – Authority opinion piece	0.17*	0.057	0.01	0.877
DD T3 – opinion piece by unnamed author	0.26**	0.003	0.02	0.699
F test (P-value)		0.521		0.639
		Effectiveness ratings		
DD T1 – Basic	-0.18	0.240	-0.04	0.698

DD T2 – Authority opinion piece	-0.01	0.937	-0.05	0.648
DD T3 – opinion piece by unnamed author	-0.24	0.118	-0.03	0.739
F test (P-value)		0.300		0.992

Respondents with prior beliefs that are not in keeping with the message of the policy brief are not more likely to discredit it

One reason for the absence of changes in ratings of evidence and effectiveness could be 'belief perseverance'. This happens when people persist in adhering to theories beyond what the evidence would suggest. Beliefs tend to be resistant to new data.

About half of respondents reported that the evidence regarding the effectiveness of bio-fortification and home gardens is either strong or very strong. A similar share of respondents reported that bio-fortification and home gardens are effective interventions to reduce malnutrition. The policy brief challenges these views. We found that in spite of the policy brief, most respondents hold their original views. We might expect the respondent to discredit the policy brief when it is not in agreement with prior beliefs.

The respondents provided ratings at follow-up for how convincing and robust they found the policy brief, and for how strong they considered the evidence it contained. We regressed these ratings on prior beliefs at baseline. The expectation was that respondents feeling strongly in favour of the effectiveness of the interventions, and of the strength of the existing evidence at baseline, would rate the policy brief less favourably at the follow-up. The regression also contains a number of control variables. It is run only for the group receiving the treatment.

The results are contrary to our expectations. Respondents with stronger prior beliefs in favour of the intervention rated the policy brief more favourably on all three accounts considered. It would seem that respondents rate positively research challenging their priors but do not change these priors nevertheless. Among the control variables considered, only residence in a high-income country and higher education have a statistically significant effect. Respondents living in rich countries and more highly educated tend to rate the policy brief less favourably.

Table 3.12 Respondents' ratings of the policy brief by prior beliefs

	Agree with: 'The argument presented in the policy brief is convincing'		Agree with: 'The methodology used for the study described in the policy brief is robust'		How do you rate the policy brief in terms of the strength of evidence presented?	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
Evidence on bio-fortification is strong	0.10	0.392	0.14	0.257	0.13	0.298
Evidence on bio-fortification is very strong	0.26*	0.096	0.36**	0.028	0.34**	0.042
Evidence on home gardens is strong	0.11	0.299	0.05	0.648	0.02	0.881
Evidence on home gardens is very strong	0.49***	0.000	0.33**	0.008	0.44***	0.000
Bio-fortification is effective	0.06	0.542	0.11	0.250	0.10	0.353
Home gardens is effective	0.13	0.161	0.16	0.107	0.18*	0.083

Time has a positive effect on changes in beliefs for both the treatment and non-treatment groups

Time had a significant effect on changes in beliefs for both the treatment and non-treatment groups. In particular, time had a negative effect on readers' beliefs about the effectiveness of small-scale fisheries and a positive effect on readers forming an opinion about all of the other interventions (bio-fortification, dairy development, home gardens).

The time result could be picking up a study effect that is not true of the unsurveyed population. While the treatment delivered to the control group did not include any reference to bio-fortification, dairy development, home gardens or small-scale fisheries, the survey did. Simply by asking readers about their beliefs in relation to these interventions the study may have catalysed them to seek more information about these interventions, be alert to information they happen across or to ponder an issue they had not pondered before. This explanation seems particularly true of the positive effect on readers' forming an opinion regarding three of the interventions. Alternately, the time result could be picking up a universal effect that would also be true of the unsurveyed population. The majorities of the control and treatment groups were invited to join the study from the IDS Knowledge Services

contact lists, and are therefore likely to be present or past users of IDS Knowledge Services. It is possible that over the study period they were similarly exposed to other information about these interventions, either through use of our products or the wider media. This seems most likely in the case of the negative effect of time on readers' beliefs about the effectiveness of small-scale fisheries.

3.2 What impact did the policy brief intervention have on readers' intentions to act?

We asked respondents immediately after the intervention and one week later about their intentions to complete one or more of eleven follow-up actions (Box 3.1). The intended actions can be loosely grouped into five categories that require progressively greater effort and progressively greater co-operation from other people. The response options were 'Yes', 'Maybe', 'No', 'Don't know' and were given the numerical values 3, 2, 1 and 0 respectively.

Box 3.1 intended and actual actions explored through the survey

- Revise the message
  - Re-read the policy brief
- Share the message
  - Send the policy brief to someone else
  - Tell someone about the key message of the policy brief
  - Write a blog or article
- Seek further information
  - Read the full report of the study discussed in the policy brief
  - Source more information about some/all of the studies discussed in the brief
  - Source other research/information related to the topic of the policy brief
- Review practice
  - Review your current policies/practices regarding the topic of the policy brief
  - Review your approach to researching/evaluating an intervention related to the topic of the policy brief
- Change practice
  - Change your current policies/practice regarding the topic of the policy brief
  - Commission new research related to the topic of the policy brief

Respondents are more likely to report an intention to revise and share the message of the policy brief, than to complete more effort-filled actions

We expect that as the effort and cooperation that is required to complete the action increases, readers' intentions to carry out that action will decrease.

Table 3.13 Mean rating of the intended follow-up actions (1 is no intended follow-up actions, 2 is a maybe, and 3 is an expressed intention)

Variable	Mean	Std. Dev.	Obs.
Re-read the policy brief	2.38	0.82	406
Send the policy brief to someone else	2.30	0.80	402
Tell someone about the key message of the policy brief	2.39	0.78	408
Write a blog or article	1.48	0.68	389
Read the full report of the study discussed in the policy brief	2.16	0.82	409
Source more information about some/all of the studies discussed in the brief	2.15	0.78	402
Source other research/information related to the topic of the policy brief	2.20	0.77	402
Review your current policies/practices regarding the topic of the policy brief	1.93	0.85	380
Review your approach to researching/evaluating an intervention related to the topic of the policy brief	2.04	0.83	385
Change your current policies/practice regarding the topic of the policy brief	1.67	0.71	359
Commission new research related to the topic of the policy brief	1.54	0.72	364

Table 3.14 Mean rating of the intended follow-up actions in treatment versus control

	Control	All treatments	t
Re-read the policy brief	2.28	2.41	**-2.96**
	0.88	0.79	
Send the policy brief to someone else	2.19	2.34	**-3.15**
	0.85	0.78	
Tell someone about the key message of the policy brief	2.24	2.44	**-4.68**
	0.86	0.74	
Write a blog or article	1.47	1.48	-0.37
	0.66	0.69	
Read the full report of the study discussed in the policy brief	2.21	2.14	1.45
	0.84	0.81	
Source more information about some/all of the studies discussed in the brief	2.26	2.11	**3.48**
	0.80	0.77	
Source other research/information related to the topic of the policy brief	2.24	2.18	1.24
	0.81	0.76	
Review your current policies/practices regarding the topic of the policy brief	1.90	1.94	-0.77
	0.85	0.85	
Review your approach to researching/evaluating an intervention related to the topic of the policy brief	1.92	2.08	**-3.40**
	0.85	0.83	
Change your current policies/practice regarding the topic of the policy brief	1.65	1.68	-0.83
	0.72	0.70	
Commission new research related to the topic of the policy brief	1.65	1.51	**3.42**
	0.78	0.70	

When looking at the sample as a whole, our hypothesis is confirmed. The intended actions that score the highest are: 'Re-read the policy brief', 'Send the policy brief to someone else' and 'Tell someone about the key message of the policy brief.' These are all actions that can be carried out with fairly low effort and cooperation from others. Blogging/writing an article, commissioning new research and changing policies have predictably the lowest means. However, these averages hide significant differences across the treatment groups and the control group. The treatment group is significantly more likely to tell, send and re-read the policy brief, as well as review their approach to researching/evaluating an intervention related to the topic of the policy brief, whereas the placebo group is more likely to 'source more information about some/all of the studies discussed in the brief'

and 'commission new research related to the topic of the policy brief'. The greater intention to source information and commission new research could be an indication that the placebo policy brief was less satisfactory and conclusive (and therefore that it possibly got people more curious/interested).

We find a clear Authority effect, and opinion-piece effect on readers' intentions to share the messages of the brief

While in the previous section we explored the simple averages across treatment and placebo, in this section we want to further disentangle the differences across different types of treatment, while controlling for possible effect modifiers previously hypothesised to potentially make a difference; education, gender, self-reported influence in central and local government and finding the policy brief convincing. We expect that readers of the two treatments that included an opinion piece would be more likely to report an intention to act, because the call to act was stronger in these briefs.

Tables 3.15 reports the results. Our hypothesis was partly confirmed. We find a clear authority-effect on readers' intentions to 'send the policy brief to someone else' and an opinion-piece effect (i.e. an effect for both of the treatments that included the opinion piece) on 'intending to tell someone about the key messages'. We further find that the third treatment group (opinion piece without known author) is less likely to read the full report and seek out more information than the other groups.

Gender and self-perceived levels of influence also affect respondents' intention to act

Two factors were found to be significant in relation to intentions to act. Firstly, readers' own ratings of the level of influence they have on central and local government decisions have differential effects[24] (Table 3.15). Influence on central government is found to be positively correlated only with sending the policy brief on to others. Influence on local government, on the other hand, is found to be positively correlated with telling others about the findings, blogging, as well as reviewing and changing policies and research approaches. The only intended actions where no significant coefficient was detected for local influence were re-reading the policy brief, sending it on, and sourcing more research/information about the topic.

The difference between the two levels of self-assessed influence is interesting – with those influential at the central level not expressing more intentions to act than others (except for sending on the policy brief) and those influential at the local government level found to be over the average active, especially when it comes to those intended actions that do not require the person to seek more information. There could be several explanations for these findings. Suppose that readers with

[24] We calculated the variance inflation factors (vif), and did not find evidence of severe multi-colinearity.

a higher self-perceived level of influence do have a higher actual level of influence. These readers may be more inclined to intend to act because they have greater opportunity to make a difference through their work. Suppose instead that self-perceived level of action is more an indicator of internal locus of control. Readers with a higher internal locus of control may be more inclined to act because they believe that their actions will make a difference. Both of these observations could explain the findings for local level influence, but what about influence on central government? One possibility is that our survey options do not adequately capture the type of actions that people use to influence policy at central level. For example, the knowledge from the brief could be internalised and conveyed as opinions or facts in meetings and corridor discussions without the person being conscientious of, and acknowledging, where the information comes from. Another possibility is that for central influence, self-assessment does not match reality.

Secondly, gender is significantly (negatively) correlated with the intention to act for most of the intended actions, implying that women are less likely to claim that they will do follow-up actions than men (also Table 3.15). Again, there could be several explanations for this finding. Suppose that women are less inclined to act generally and therefore do not report an intention to act; that women are less empowered to act or rewarded for acting within their workplace; or suppose that women are less inclined to report an intention to act that they know they are unlikely to be able to fulfil. Wondering whether there is a gender difference in the truthfulness with which individuals answer surveys, we thought of looking at whether there was a difference between men and women when it came to claiming having heard about our fictitious expert, Dr. Anthony Sturman. There was no significant correlation.

The types of follow-up actions where gender is not found to matter are activities that do not entail direct interaction with others (re-reading the brief and sending it on). This could be taken as indicative evidence that it is in direct communication with others that women are facing communication barriers.

Table 3.15 Intended actions at immediate follow-up

Variables	Re-read the policy brief	Send the policy brief to someone else	Tell someone about the key message of the policy brief	Write a blog or article	Read the full report of the study discussed in the policy brief	Source more information about some/all of the studies discussed in the brief	Source other research/ information related to the topic of the policy brief	Review your current policies/ practices regarding the topic of the policy brief	Review your approach to researching/ evaluating an intervention related to the topic of the policy brief	Change your current policies/ practice regarding the topic of the policy brief	Commission new research related to the topic of the policy brief
T1 – Basic brief	0.219	0.0829	0.0843	0.108	-0.0379	-0.228	-0.0160	-0.141	-0.162	0.176	-0.274*
	(0.165)	**(0.161)**	**(0.157)**	**(0.148)**	**(0.146)**	**(0.158)**	**(0.156)**	**(0.163)**	**(0.143)**	**(0.165)**	**(0.148)**
T2 – Authority brief	0.208	-0.0511	0.371**	0.468***	0.0130	-0.0895	-0.00112	0.166	0.151	0.237	-0.189
	(0.167)	**(0.163)**	**(0.159)**	**(0.150)**	**(0.148)**	**(0.160)**	**(0.157)**	**(0.164)**	**(0.145)**	**(0.167)**	**(0.150)**
T3 – Opinion brief	0.198	-0.264	0.148	0.395***	0.00802	-0.285*	-0.0836	0.0419	0.179	0.201	-0.172
	(0.165)	**(0.161)**	**(0.157)**	**(0.148)**	**(0.146)**	**(0.158)**	**(0.155)**	**(0.162)**	**(0.143)**	**(0.165)**	**(0.148)**
Education	-0.105	-0.00307	-0.0996	-0.108	-0.241***	-0.134	-0.0783	-0.0728	-0.103	-0.0992	-0.0236
	(0.0864)	**(0.0841)**	**(0.0821)**	**(0.0774)**	**(0.0764)**	**(0.0827)**	**(0.0814)**	**(0.0851)**	**(0.0751)**	**(0.0863)**	**(0.0774)**
Gender	-0.260**	-0.545***	-0.159	-0.379***	-0.449***	-0.328***	-0.333***	-0.599***	-0.460***	-0.502***	-0.452***
	(0.118)	**(0.115)**	**(0.112)**	**(0.106)**	**(0.104)**	**(0.113)**	**(0.111)**	**(0.116)**	**(0.103)**	**(0.118)**	**(0.106)**
Self-perceived	0.00710	-0.00236	0.0824***	0.0415	0.00595	-0.00684	0.00995	0.0513*	-0.00475	0.0282	0.0222

influence in central government	**(0.0314)**	**(0.0306)**	**(0.0298)**	**(0.0281)**	**(0.0277)**	**(0.0300)**	**(0.0296)**	**(0.0309)**	**(0.0273)**	**(0.0314)**	**(0.0281)**
Self-perceived influence in local government	0.0428	0.0835***	0.0417	0.0652**	0.0864***	0.0680**	0.0478	0.0973***	0.109***	0.0670**	0.0814***
	(0.0314)	**(0.0305)**	**(0.0298)**	**(0.0281)**	**(0.0277)**	**(0.0300)**	**(0.0296)**	**(0.0309)**	**(0.0273)**	**(0.0314)**	**(0.0281)**
Constant	2.856***	2.513***	2.336***	2.820***	2.680***	3.134***	2.759***	2.310***	2.101***	2.547***	1.587***
	(0.568)	**(0.553)**	**(0.540)**	**(0.509)**	**(0.502)**	**(0.544)**	**(0.536)**	**(0.560)**	**(0.494)**	**(0.568)**	**(0.509)**
Obs	412	412	412	412	412	412	412	412	412	412	412
R-squared	0.038	0.112	0.088	0.122	0.126	0.063	0.049	0.162	0.139	0.100	0.115

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

3.3 What impact did the policy brief intervention have on readers' completed actions?

We asked respondents one week and three months after the intervention about whether they had completed eleven follow-up actions. The list of completed actions is the same as the intended actions (Box 3.1, at the start of the intentions section) and can be loosely grouped into five categories that require progressively greater effort and progressively greater cooperation from other people. The response options were 'Yes', 'No but I intend to', and 'No', and were given the numerical values 3, 2, and 1 respectively.

Respondents are more likely to report completing actions that require little effort

Again, we expect that as the required effort and required cooperation increases, readers reporting they have carried out the action will decrease, and this is confirmed by looking at the mean ratings of the follow-up actions in Table 3.16. Interestingly, the only significant difference detected between the treatment and placebo control group is in the actions related to commissioning more information and more research; the group receiving the placebo brief is more likely to report carrying out these activities.

Table 3.16 Mean rating of the follow-up actions in treatment versus control (1-week follow-up survey)

	Control	All treatments	t
Re-read the policy brief	2.00	2.05	-0.34
	0.93	0.89	
Send the policy brief to someone else	1.63	1.82	-1.41
	0.84	0.91	
Tell someone about the key message of the policy brief	1.85	2.01	-1.16
	0.90	0.91	
Write a blog or article	1.20	1.13	1.12
	0.44	0.40	
Read the full report of the study discussed in the policy brief	1.56	1.55	0.12
	0.73	0.70	
Source more information about some/all of the studies discussed in the brief	1.74	1.53	**1.78**
	0.85	0.76	
Source other research/information related to	1.88	1.55	**2.74**

the topic of the policy brief	0.89	0.78	
Review your current policies/practices regarding the topic of the policy brief	1.45 0.80	1.40 0.72	0.40
Review your approach to researching/evaluating an intervention related to the topic of the policy brief	1.48 0.77	1.63 0.82	-1.22
Change your current policies/practice regarding the topic of the policy brief	1.27 0.58	1.26 0.57	0.07
Commission new research related to the topic of the policy brief	1.19 0.51	1.15 0.44	0.55

While we expected reported actions to increase over time, given that this was a cumulative question (so those having reported having carried out an action in the 1-week follow-up should also report this in the 3-month survey), the findings were not clear-cut. If attritors are similar to non-attritors in terms of their reporting on actions, then the changes in percentages are an indication of whether reported actions increased over time. An increase was found for the following actions: sending the policy brief, telling about the policy brief message, blogging about it, reading the full report and changing a policy. It is quite plausible, however, that attritors differ on unobservable features that are related to how they would report on actions. For example, those who have reported that they intend to carry out actions (either by replying 'yes' to the intended actions question in survey 2 or 'no, but I intend to' in survey 3) but then failed to do so, may be more likely to not want to admit to this and hence drop out of the survey in round 4. Although our qualitative interviews with people who dropped out between survey 2 and 3 (immediate and 1-week follow-up) suggests that other factors (lack of time, confusion over process) were stronger drivers and many of these interviewees had taken actions (Appendix 1).

The other interesting finding is that respondents are clearly more likely to act on stated intentions to act for the 'easy' actions. 55 per cent of study participants who had indicated that they intended to re-read the brief reported having done so after one week, and 46 per cent after three months. For sending, re-reading and telling someone about the policy brief the intention to act was acted upon in more than 50 per cent of the cases in survey round 3 and more than 46 per cent of cases in survey round 4.

Table 3.17 Proportion of respondents carrying out the intended actions

Action	% carrying out intended action after 1 week	% carrying out intended action after 3 months
Re-read the policy brief	55% (85 / 154)	46% (57 / 123)
Send the policy brief to someone else	54% (74 / 138)	56% (58 / 103)
Tell someone about the key message of the policy brief	60% (84 / 141)	61% (67 / 109)
Write a blog or article	26% (5 / 19)	29% (6 / 21)
Read the full report of the study discussed in the policy brief	26% (26 / 99)	39% (29 / 75)
Source more information about some/all of the studies discussed in the brief	41% (35 / 86)	37% (25 / 67)
Source other research/information related to the topic of the policy brief	40% (38 / 94)	37% (26 / 71)
Review your current policies/ practices regarding the topic of the policy brief	35% (24 / 68)	33% (17 / 52)
Review your approach to researching/evaluating an intervention related to the topic of the policy brief	38% (35 / 91)	35% (23 / 66)
Change your current policies/practice regarding the topic of the policy brief	35% (9 / 26)	39% (7 / 18)
Commission new research related to the topic of the policy brief	20% (4 / 20)	16% (3 / 19)

We find that the Authority effect persists into actions related to sharing the messages of the brief

While declarations of intentions may be easy to make, we are particularly interested in finding out whether these intentions are actually converted into actions. A weakness of our study is of course that the actions are also self-declared, so people could potentially choose to appear consistent by pretending to have done what they intended to do.

Tables 3.18 and 3.19 report the results (later in this section). We find that the authority effect on readers' intentions to 'send the policy brief to someone else' and on 'intending to tell someone about the key messages' persists into actions, but only when we exclude the variable 'convincing' from the regression analysis. In other words, the fact that readers found the policy brief with an authority piece convincing seems to explain why people were more inclined to share this brief. We further find that all three treatment groups are significantly less likely than the placebo control group to source more information and research about the topic. At 3 months' follow-up, we observe that the readers of the short brief are less likely than the others to report having reviewed policies.

Gender and self-perceived levels of influence also affect respondents' declared actions

Policy influence at the central and local levels appears to affect 1-week follow-up actions much the same way it did intended actions one week earlier, with influence at central level only making it more likely that the brief is sent to someone else, and local level influence making several of the other actions more likely (Table 3.18). At 3 months' follow-up, the only significant findings for those with high self-reported influence in central government is that they are significantly less likely to have re-read the policy brief or sourced more information than others. Self-declared influence in local government continues to make several of the actions more likely (Table 3.19).

The significance of the gender variable has decreased when looking at actual reported actions. At 1 week follow-up, women are less likely to report having re-read the brief or the full report, they are less likely to have told someone about the findings, and they are less likely to report having resourced more information or research (Table 3.18). At 3 months' follow-up, we find that the actions they report significantly less of are different from the 1 week survey; they are here less inclined to share the findings (send, tell or blog), as well as reviewing policies according to the insights gained (Table 3.19). The main insight to be gauged from this analysis is that relative to men, women may be more cautious in stating intentions to act than men, but that some of these differences decrease when looking at actual actions.

Finally, it may be worth noting that higher education consistently makes blogging less likely (Tables 3.18 and 3.19). This could potentially have implications for the quality of blogs, as well as the chance of reaching academic audiences with this type of activity.

Table 3.18 Actions at 1 week follow-up

Variables	Re-read the policy brief	Send the policy brief to someone else	Tell someone about the key message of the policy brief	Write a blog or article	Read the full report of the study discussed in the policy brief	Source more information about some/all of the studies discussed in the brief	Source other research/ information related to the topic of the policy brief	Review your current policies/ practices regarding the topic of the policy brief	Review your approach to researching/ evaluating an intervention related to the topic of the policy brief	Change your current policies/ practice regarding the topic of the policy brief	Commission new research related to the topic of the policy brief
T1 – Basic brief	0.133	-0.0229	-0.115	-0.0103	-0.0874	-0.438**	-0.492**	-0.0162	-0.0442	0.0149	-0.225
	(0.239)	**(0.204)**	**(0.238)**	**(0.238)**	**(0.130)**	**(0.221)**	**(0.224)**	**(0.201)**	**(0.167)**	**(0.220)**	**(0.137)**
T2 – Authority brief	0.00974	-0.0600	0.398*	0.425*	-0.153	-0.145	-0.409*	-0.0472	-0.0197	0.420*	0.0633
	(0.240)	**(0.204)**	**(0.239)**	**(0.239)**	**(0.130)**	**(0.221)**	**(0.225)**	**(0.202)**	**(0.168)**	**(0.221)**	**(0.137)**
T3 – Opinion brief	-0.0131	-0.0711	0.314	0.211	-0.170	-0.365*	-0.537**	-0.0825	0.0542	0.293	-0.0960
	(0.232)	**(0.198)**	**(0.231)**	**(0.232)**	**(0.126)**	**(0.215)**	**(0.218)**	**(0.196)**	**(0.163)**	**(0.214)**	**(0.133)**
Education	-0.174	-0.241**	-0.161	-0.245**	-0.156**	-0.0814	-0.00104	-0.111	-0.0914	-0.0902	-0.0365
	(0.122)	**(0.104)**	**(0.122)**	**(0.122)**	**(0.0666)**	**(0.113)**	**(0.115)**	**(0.103)**	**(0.0856)**	**(0.113)**	**(0.0699)**
Gender	-0.525***	-0.480***	-0.355**	-0.491***	-0.0994	-0.359**	-0.466***	-0.177	-0.183	-0.328**	-0.171*
	(0.166)	**(0.142)**	**(0.165)**	**(0.166)**	**(0.0905)**	**(0.154)**	**(0.156)**	**(0.140)**	**(0.116)**	**(0.153)**	**(0.0950)**
Self-perceived	0.0384	0.00714	0.127***	0.0137	-0.0147	-0.00510	-0.0494	0.0503	0.0215	0.00838	0.0370
	(0.0432)	**(0.0369)**	**(0.0430)**	**(0.0431)**	**(0.0235)**	**(0.0400)**	**(0.0406)**	**(0.0364)**	**(0.0303)**	**(0.0399)**	**(0.0247)**

influence in central government											
Self-perceived influence in local government	0.0196	0.0114	-0.00359	0.0800*	0.0427*	0.0480	0.0727*	0.0766**	0.0554*	0.0995**	0.0219
	(0.0433)	**(0.0369)**	**(0.0431)**	**(0.0431)**	**(0.0236)**	**(0.0400)**	**(0.0406)**	**(0.0365)**	**(0.0303)**	**(0.0399)**	**(0.0247)**
Constant	3.282***	3.149***	2.203***	3.313***	1.382***	2.129***	2.058***	1.257*	1.065*	1.503*	0.665
	(0.832)	**(0.709)**	**(0.828)**	**(0.829)**	**(0.453)**	**(0.769)**	**(0.781)**	**(0.701)**	**(0.582)**	**(0.768)**	**(0.475)**
Obs	262	262	262	262	262	262	262	262	262	262	262
R-squared	0.066	0.068	0.100	0.095	0.051	0.051	0.077	0.080	0.056	0.087	0.064

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 3.19 Actions at 3 months' follow-up

Variables	Re-read the policy brief	Send the policy brief to someone else	Tell someone about the key message of the policy brief	Write a blog or article	Read full report of the study discussed in the policy brief	Source more information about some/all of the studies discussed in the brief	Source other research/ information related to the topic of the policy brief	Review your current policies/ practices regarding the topic of the policy brief	Review your approach to researching/ evaluating an intervention related to the topic of the policy brief	Change your current policies/ practice regarding the topic of the policy brief	Commission new research related to the topic of the policy brief
T1 – Basic brief	-0.337	-0.370	0.0950	-0.00767	-0.0927	-0.301	-0.562**	-0.505**	-0.0319	-0.0877	-0.0544
	(0.253)	**(0.226)**	**(0.256)**	**(0.250)**	**(0.146)**	**(0.227)**	**(0.233)**	**(0.217)**	**(0.182)**	**(0.234)**	**(0.146)**
T2 – Authority brief	-0.0154	-0.357	0.459*	0.656***	0.0726	-0.182	0.117	0.0132	-0.155	-0.0620	0.00882
	(0.252)	**(0.225)**	**(0.255)**	**(0.249)**	**(0.146)**	**(0.227)**	**(0.232)**	**(0.216)**	**(0.181)**	**(0.233)**	**(0.146)**
T3 – Opinion brief	-0.209	-0.212	0.281	0.328	0.0670	-0.0208	-0.283	0.0544	0.0129	0.255	-0.0809
	(0.242)	**(0.216)**	**(0.245)**	**(0.239)**	**(0.140)**	**(0.217)**	**(0.223)**	**(0.207)**	**(0.174)**	**(0.224)**	**(0.140)**
Education	-0.377***	-0.260**	-0.163	-0.239*	-0.247***	-0.253**	-0.207*	-0.180*	-0.254***	-0.139	-0.131*
	(0.124)	**(0.111)**	**(0.126)**	**(0.123)**	**(0.0719)**	**(0.112)**	**(0.115)**	**(0.107)**	**(0.0895)**	**(0.115)**	**(0.0719)**
Gender	-0.276	-0.300*	-0.451**	-0.575***	-0.223**	-0.176	-0.227	-0.313**	-0.194	-0.215	-0.138
	(0.176)	**(0.157)**	**(0.178)**	**(0.174)**	**(0.101)**	**(0.158)**	**(0.162)**	**(0.151)**	**(0.126)**	**(0.162)**	**(0.101)**
Self-perceived influence in central governme	-0.0638	0.0247	0.0183	-0.0178	-0.00946	-0.0812*	-0.0547	0.0223	-0.000768	0.0149	-0.0359
	(0.0491)	**(0.0438)**	**(0.0497)**	**(0.0486)**	**(0.0284)**	**(0.0441)**	**(0.0452)**	**(0.0421)**	**(0.0353)**	**(0.0454)**	**(0.0284)**

nt											
Self-perceived influence in local government	0.149***	0.121***	0.0972**	0.194***	0.0356	0.160***	0.145***	0.104***	0.109***	0.0715*	0.0786***
	(0.0461)	**(0.0411)**	**(0.0467)**	**(0.0456)**	**(0.0267)**	**(0.0414)**	**(0.0425)**	**(0.0396)**	**(0.0332)**	**(0.0426)**	**(0.0267)**
Constant	3.995***	2.744***	2.342***	2.933***	2.034***	2.529***	2.420***	2.003***	2.007***	1.690**	1.215**
	(0.828)	**(0.739)**	**(0.839)**	**(0.819)**	**(0.479)**	**(0.744)**	**(0.763)**	**(0.711)**	**(0.596)**	**(0.766)**	**(0.479)**
Obs	233	233	233	233	233	233	233	233	233	233	233
R-squared	0.106	0.129	0.092	0.194	0.083	0.103	0.110	0.118	0.128	0.055	0.069

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We find a delayed Opinion-piece effect on readers being convinced by the brief, and that women are less likely than men to find the policy brief convincing

We used single difference at the three follow-up stages to analyse whether finding the policy briefing convincing (dependent variable) could be explained by the differences in brief design, as well as a number of other factors, including gender, age, self-rated policy-influence and belief in the strength of evidence when provided by systematic reviews. Table 3.20 shows that while none of the brief designs are significant for finding the brief convincing when controlling for the other variables at immediate follow-up, the two versions that include an opinion piece acquire significance over the course of the study (i.e. at 1 week and 3 months' follow-up), possibly indicating that the effect of the opinion piece trickles in slowly. A finding to be expected was that a strong belief in the evidence provided through systematic reviews would increase the likelihood of finding the brief convincing, and this was indeed confirmed by the data.

Gender was found consistently with a negative coefficient, indicating that women are finding this way of presenting evidence less convincing than men. There could be many explanations for why women are less convinced by this policy brief.[25] As discussed earlier, existing studies illustrate that gender effects in communication are deeply complex, and depend on multiple interacting factors.[26] While we cannot unpack the drivers for the gender effects in this study, it is an important area for research and could have significant implications for research communicators if it is found that there is a gender effect *specific* to policy briefs.

Table 3.20 Who found the policy brief convincing?

	Immediate follow-up	1 week follow-up	3 months' follow-up
T1 – Basic brief	0.0550	0.152	0.0996
	(0.113)	(0.140)	(0.153)
T2 – Authority brief	0.0574	0.270*	0.300*
	(0.114)	(0.141)	(0.154)
T3 – Opinion brief	0.0847	0.180	0.300**

[25] It could be that men and women expect a policy brief to take an authoritative tone, with directive recommendations, but for some reason men are more forgiving of the tentative tone of this particular policy brief because they align themselves with the author for some reason – perhaps because they are also men, or because they are male researchers.

[26] In their 2009 study of gender, language and social influence, Reid and colleagues claim that 'linguistic style, stereotypes and social influence are tightly intertwined' (Reid et al. 2009: 466) and draw on self-categorisation theory, role congruity theory and expectation states theory to explain variation in men and women's responses to a social message presented by a female reader who was introduced as either female or highly educated.

	(0.113)	(0.138)	(0.149)
Gender	-0.237***	-0.298***	-0.238**
	(0.0814)	(0.0977)	(0.105)
Age group	-0.0388	-0.00911	-0.0912*
	(0.0348)	(0.0436)	(0.0472)

Belief in effectiveness of actions

Finally, we asked respondents about what effect they expected the various actions would have on the results they achieved through their work. Results are reported in Tables 3.21 and 3.22. Not surprisingly, we found that the correlation between carrying out a certain action and believing it to have positive effects on results was very high for all actions. Two other observations may be worth making: (i) higher education seems to make people more sceptical to the effectiveness of the following activities: telling someone about the key messages, reviewing policy, and reviewing research approach; (ii) organisation type, which is loosely organised from international development agencies at one end to more academic institutions at the other, was found to affect the belief in seeking more knowledge (sourcing information and research, commissioning additional research). In particular, the more academically oriented institutions had a higher belief in this than the international development-oriented ones.

By asking the participants in the survey first whether they had undertaken any of the listed actions, and immediately thereafter what level of effect they expected the action to have on the results they achieve through their work, we may have inadvertently introduced a bias through the survey order. People are likely to want to appear rational by stating that their actions are likely to have significant effects.

Table 3.21 Expected results of actions for respondents with different features

Variables	Re-read the policy brief	Read the full report of the study discussed in the policy brief	Send the policy brief to someone else	Tell someone about the key message of the policy brief	Write a blog or article	Source more information about some/all of the studies discussed in the brief	Source other research/ information related to the topic of the policy brief	Review your current policies/ practices regarding the topic of the policy brief	Change your current policies/ practice regarding the topic of the policy brief	Review approach to researching/ evaluating an intervention related to the topic of the policy brief	Commission new research related to the topic of the policy brief
Education	-0.0471	-0.0509	-0.0375	-0.107**	-0.0410	-0.0263	-0.0349	-0.0775**	-0.0298	-0.122***	0.00920
	(0.0564)	**(0.0543)**	**(0.0495)**	**(0.0508)**	**(0.0362)**	**(0.0480)**	**(0.0444)**	**(0.0370)**	**(0.0405)**	**(0.0427)**	**(0.0307)**
Gender	-0.0894	0.0886	0.0559	0.0971	0.0760	0.131**	-0.0579	0.0109	0.0755	0.0697	0.0226
	(0.0751)	**(0.0723)**	**(0.0656)**	**(0.0673)**	**(0.0474)**	**(0.0636)**	**(0.0591)**	**(0.0488)**	**(0.0534)**	**(0.0566)**	**(0.0406)**
Age group	-0.00699	-0.0172	0.00711	0.000989	-0.0269	-0.00825	-0.0258	-0.0154	-0.00991	0.0155	-0.0106
	(0.0332)	**(0.0318)**	**(0.0294)**	**(0.0299)**	**(0.0211)**	**(0.0282)**	**(0.0261)**	**(0.0218)**	**(0.0239)**	**(0.0252)**	**(0.0181)**
Organisation type	-0.00407	0.00391	0.00509	-0.00745	0.00338	0.0133*	0.0197***	0.00628	0.00358	0.00763	0.0111**
	(0.00859)	**(0.00825)**	**(0.00757)**	**(0.00773)**	**(0.00551)**	**(0.00731)**	**(0.00677)**	**(0.00564)**	**(0.00617)**	**(0.00652)**	**(0.00468)**
Self-perceived influence in central government	0.0276	0.0132	0.00229	0.0146	0.00525	0.0176	0.0260*	0.0124	0.0138	0.0181	0.0196*
	(0.0190)	**(0.0183)**	**(0.0169)**	**(0.0171)**	**(0.0121)**	**(0.0162)**	**(0.0151)**	**(0.0125)**	**(0.0137)**	**(0.0144)**	**(0.0104)**
Self-perceived influence in	0.00746	-0.0174	0.0206	0.0315*	0.00571	0.00710	-0.00502	0.000324	-0.000912	0.00230	0.00779
	(0.0191)	**(0.0184)**	**(0.0168)**	**(0.0173)**	**(0.0123)**	**(0.0164)**	**(0.0152)**	**(0.0126)**	**(0.0138)**	**(0.0147)**	**(0.0104)**

local government											
Found the brief convincing	0.190***	0.109**	0.0586	0.0715	0.0453	0.0495	0.0662*	0.0474	0.0928***	0.0884**	0.0500*
	(0.0497)	**(0.0477)**	**(0.0446)**	**(0.0469)**	**(0.0308)**	**(0.0408)**	**(0.0383)**	**(0.0312)**	**(0.0344)**	**(0.0367)**	**(0.0265)**
Constant	0.403	0.187	0.0120	0.420	0.168	-0.182	0.186	0.427*	-0.000254	0.417	-0.223
	(0.377)	**(0.364)**	**(0.328)**	**(0.339)**	**(0.239)**	**(0.318)**	**(0.294)**	**(0.244)**	**(0.267)**	**(0.283)**	**(0.203)**
Observations	262	262	262	262	262	262	262	262	262	262	262
R-squared	0.383	0.448	0.461	0.420	0.430	0.474	0.573	0.588	0.453	0.628	0.578

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 3.22 Expected results of actions for respondents who carried out those actions

Variables	Re-read the policy brief	Read the full report of the study discussed in the policy brief	Send the policy brief to someone else	Tell someone about the key message of the policy brief	Write a blog or article	Source more information about some/all of the studies discussed in the brief	Source other research / information related to the topic of the policy brief	Review your current policies/ practices regarding the topic of the policy brief	Change your current policies/ practice regarding the topic of the policy brief	Review approach to researching /evaluating an intervention related to the topic of the policy brief	Commission new research related to the topic of the policy brief
Re-read the policy brief	0.248***										
	(0.0293)										
Read the full report of the study discussed in the brief		0.400***									
		(0.0330)									
Send the policy brief to someone else			0.320***								
			(0.0264)								
Tell someone about the key message of the policy brief				0.273***							
				(0.0275)							
Write a blog or article					0.408***						
					(0.0333)						

Source more info about some/all of the studies discussed in the brief						0.363***					
						(0.0258)					
Source other research/info related to the topic of the policy brie							0.389***				
							(0.0237)				
Review your current policies/ practices re the topic of the policy brief								0.373***			
								(0.0219)			
Change your current policies/practice re the topic of the policy brief									0.370***		
									(0.0291)		
Review your approach to researching/evaluating an intervention related to the topic of the policy brief										0.418***	
										(0.0232)	
Commission new research related to the topic of the brief											0.439***
											(0.0270)

Constant	0.403	0.187	0.0120	0.420	0.168	-0.182	0.186	0.427*	-0.000254	0.417	-0.223
	(0.377)	**(0.364)**	**(0.328)**	**(0.339)**	**(0.239)**	**(0.318)**	**(0.294)**	**(0.244)**	**(0.267)**	**(0.283)**	**(0.203)**
Observations	262	262	262	262	262	262	262	262	262	262	262
R-squared	0.383	0.448	0.461	0.420	0.430	0.474	0.573	0.588	0.453	0.628	0.578

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

4 Discussion

4.1 Weak overall effect on beliefs, but a tendency to share

Overall, we found the policy brief had a fairly weak effect on readers' beliefs; creating more evidence-accurate beliefs where no priors were held, but only slightly affecting those who entered the study with prior beliefs.

We could explain this finding as an anomaly of the policy brief in question – it contained a number of complex messages about the inconclusiveness of evidence that were nuanced in their presentation throughout the brief. A thematic analysis of participants' responses to the question 'In your own words what was the key message of the brief?' showed readers took away many and varied messages: some in keeping with the key messages of the brief (e.g. that bio-fortification is promising but not proven), some contrary to the key messages of the brief (e.g. that bio-fortification is a proven solution), some very generic messages incidental to the systematic review (e.g. that child nutrition is a problem) and some that lead us to question whether the respondent read the brief at all (e.g. directly quoting the first line of the brief 'Agriculture interventions alone will not eradicate malnutrition'.).[27] It is possible that a policy brief dealing with a clearer cut set of messages may be more effective in changing beliefs.

Attitude change research provides some alternative explanations. Studies of media communication have focused on the phenomenon that different individuals may receive the same message but act on it quite differently. Influential studies conducted by Carl Hovland throughout his career (for example, Hovland 1954) concluded that people are very selective in how they use media; in particular regarding exposure, interpretation of information, and retention of information obtained through the media. In particular, three types of selectivity are relevant to our study:

- selective exposure (whereby people seek out not only topics of interest to them but more importantly viewpoints with which they expect to agree);
- selective perception (whereby people interpret facts to suit their existing biases), and;
- selective retention (whereby people remember messages that support their opinion longer than they remember opposing messages).

[27] See Appendix 4 for a full summary of this qualitative analysis.

Selective exposure may explain the correlation we found between relevance and attrition; meaning participants whose work does not touch on agriculture and nutrition were more likely to drop out of the study. Suppose that people with strong prior beliefs are less likely to change them, and that these people are also more likely to a) be attracted to the study in the first place – selective exposure and b) stay in the study to the end. Were this the case, we would expect to find stronger effects in a randomly chosen study sample representative of the general population. In reality, however, readers of a policy brief will be self-selecting and therefore the concept of selective exposure has implications for how a policy brief is branded, presented and disseminated to make it appealing to the widest possible audience.

We found examples of selective perception and selective retention in qualitative interviews with five participants who maintained an overstated belief in the effectiveness and strength of evidence for bio-fortification and/or home gardens throughout the study period. For two of these interviewees their work did not touch on agriculture and/or nutrition. One interviewee reported developing his prior beliefs based on reading done some time ago; and another was not clear about how his belief was formed, but did have a strong opinion that 'bio-fortification is scientifically effective but socially unacceptable to much of the population in the developing world where it is needed'. Both of these interviewees had weak recall of the messages in the brief, and of the fact that the message of the brief did not support their views (selective retention). It is likely that readers of a policy brief that deals with a topic not directly relevant to their work pay less attention to the messages it contains. In these two cases, the combination of prior belief and 'light' reading of the policy brief resulted in the policy brief not affecting any change.

Three further interviewees, whose work is directly related to agriculture and/or nutrition, also maintained an overstated belief about the effectiveness of bio-fortification and home gardens. They had a stronger recall of the messages in the policy brief; however, two did not recognise that the brief presented a more cautious message about the effectiveness and evidence for bio-fortification than they presented in their survey responses (selective perception). The final interviewee who maintained a strong belief did recognise the disparity between his view and the message of the brief. He explained that his view was formed through experience and he thought the policy brief seemed to show up a lack of readily available empirical data for or against bio-fortification rather than disprove his prior belief.

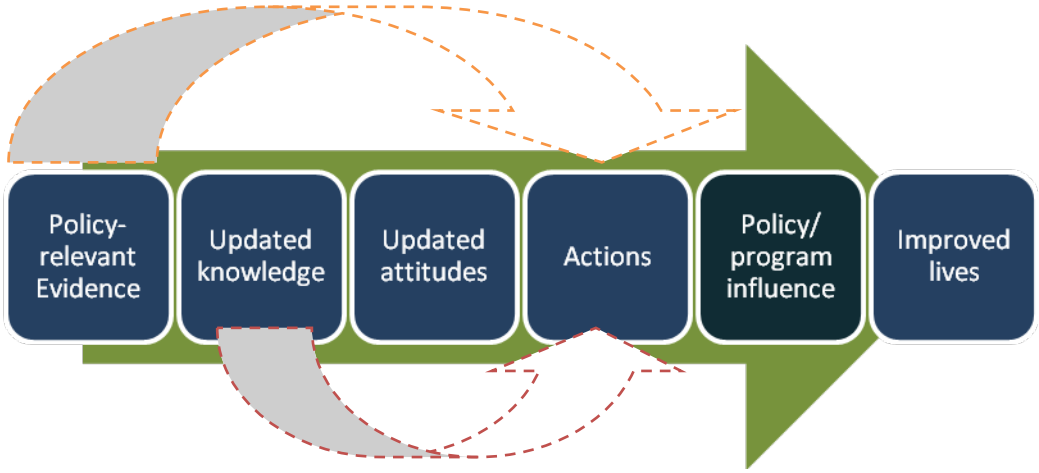
Interviewees who formed and reformed their beliefs throughout the study had mixed views about the role of the policy brief in this process. Some interviewees cited other sources of information including personal experience, the internet and a BBC radio programme for changing their views:

It was probably more to do with experience I had gained subsequently in actual practical work I had done. I had done some focus groups with farmers at that stage (3 months after reading the policy brief) so I think it (change in opinion) was a general reviewing of the situation in the light of practical observations and experience.

On the surface, finding that a significant proportion of participants pass on the message of the policy brief would appear to be a good outcome for research communication – this activity would a) keep our messages in circulation, thus increasing the chance they would land on the right desk at the right time to influence the right decision-making process, and b) add currency to our messages as they are brokered from a trusted source, thus increasing the chance they will be read by the receiver.

However, when coupled with a limited effect on belief, this finding gives us pause for thought. Returning to our simple theory of change presented in the introduction to this study, we can immediately add layers of complexity as readers move directly from receiving evidence to taking action, either without engaging with that evidence at all (i.e. without reading it) or with engagement but without an updated set of beliefs (Figure 4.1).

Figure 4.1 Shortcuts through the simple theory of change



Whatever the reason for the weak effect that the policy brief has on beliefs, if readers are telling other people about the message (which we find that they do) without fully understanding it themselves, this could have potentially negative outcomes for the researchers' overall goal – bringing about evidence-informed policy decisions. We need to further consider how we construct policy briefs to ensure the key message is clear and easily recounted, and to encourage people who then broker that knowledge to pass on the full brief rather than their interpretation of it.

4.2 The Authority and Opinion effects influence behaviour more so than beliefs

In their study of policymakers' knowledge environments, the Research and Policy in Development (RAPID) Group at ODI and the Science and Development Network (SciDev.Net) found that half of policymakers and even more researchers felt that there is insufficient dissemination of research findings for policy uptake and that as a valued communication tool, policy briefs may help to address this gap (Jones and Walsh 2008). Thus justifying the demand for policy briefs, Jones and Walsh go on to list a number of 'key ingredients of effective policy briefs', including two that are of interest to us: 1) authority, described as a messenger (individual or organisation) has credibility in eyes of policymaker, and 2) presentation of evidence-informed opinions, described as presentation of author's own views about policy implications of research finding (*ibid*: 4).

We explored the impact of Authority and Opinion in our study, and found no significant effect on beliefs but some effect on intended follow-up behaviours. We asked fourteen study participants for their views about the Authority effect. Interviewees had mixed views about whether Haddad's authorship influenced their reading – dependent on whether they were familiar with the author at all. In general, interviews seemed to show that readers who have a closer relationship with the author or his work were more likely to perceive an Authority effect. This is not to say they were more likely to agree or change their beliefs but they did feel they were more likely to engage with the policy brief and recall its message. Perhaps the Authority effect is to make the brief more memorable which in turn leads to a greater likelihood of readers sharing the message with someone else.

These findings suggest a complex and yet unresolved interaction between readers and Authority that would be interesting to unpack further for research communications going forward.

4.3 Gender effect – why are women less likely to act?

One surprising finding of the study was consistent negative correlation between being a woman and intentions to act. As discussed earlier, we theorised a number of reasons that differences could exist between men and women when it came to self-reporting behaviour in a survey. One of these possibilities was a 'boasting' effect, whereby men over-report their actions and women under-report. Our own study did not find greater or lesser honesty by either gender in their survey responses. Specifically, we asked respondents at baseline whether they were familiar with the work of four sector experts and one fictitious expert, Antony Sturman. We found no gender bias in 'boasting' knowledge of Sturman, meaning we have no basis for concluding that men over-reported their behaviours in this study compared to women.

Suppose instead that the gender effect is a result of internal factors specific to the brief or external factors specific to the environment in which women work. In the first scenario, we need to consider whether the design of this policy brief or the policy brief format in general (style, author, format) is less appealing to women or makes them less inclined to see themselves as the target audience for action. We found that women were significantly less likely than men to find the brief 'convincing', which suggests that factors internal to the brief may be driving this finding. Gendered effects in the receipt of research communications must be explored in more detail, for if they are discovered there may be far reaching implications for how we develop our research communications going forward. In the second scenario, external factors in a woman's environment discourage her from acting instead. Research has found that in group interactions, for example, information that was introduced by men was six times more likely to influence the group decision than information introduced by women (Propp 1995). If women in our own study had similar experiences when sharing knowledge, this could explain a general reluctance to carry out any follow-up actions related to information sharing, and has implications for our understanding of women's roles as knowledge brokers.

The types of intended follow-up actions where gender is not found to matter are activities that do not entail direct interaction with others (re-reading the brief, sending it on, and looking for more information). This could be taken as indicative evidence that it is in direct communication with others that women are facing communication barriers. We do find that the gender effect decreases somewhat between the stated intentions and the stated actions, potentially indicating that women may be more cautious in stating intentions to act than men. Women were also less likely to report being convinced by the brief. This may also explain a reluctance to act.

4.4 Self-perceived influence effect

A second unexpected effect that emerged in the study was a positive correlation between readers' self-perceived level of influence and their likelihood of carrying out follow-up actions. Whether the level of influence is in local government or in central government is found to matter for the type of actions found to be more likely. Rather than relying on traditional indicators of influence – job title and organisation – we developed a self-perceived level of influence scale in the hope this would pick up a more diverse group of influential actors inside and outside government who would not be identified through job title and organisation.

The initial purpose of the self-perceived level of influence questions was to disaggregate a sub-group of policymakers within our study sample. However, the differences found between perceived

influence at the central and local level in terms of correlations with intended and completed follow-up actions could suggest a number of other factors at play. Influence on central government is found to be positively correlated only with sending the policy brief on to others. Influence on local government, on the other hand, is found to positively correlate with telling others about the findings, blogging, as well as reviewing and changing policies and research approaches.

Suppose firstly that a higher self-perception of influence does reflect higher level of actual influence. Readers who have more influence may be more likely to recognise themselves as the audience for the policy brief and be more inclined to take actions as a result. Suppose instead that self-perception of influence does not reflect actual influence. It may be that the influence scale is instead picking up a personality factor, such as a high internal locus of control. It would stand to reason that readers who believe their actions have effect would be more inclined to take action at all. Both of these observations could explain the findings for local level influence, but what about influence on central government? One possibility is that our survey options do not adequately capture the type of actions that people use to influence policy at central level. Another possibility is that for central influence, self-assessment does not match reality.

Whatever the explanation, it could be that targeting these ‘movers and shakers’ could provide good outcomes for research communications work. If they do in fact have influence, they are recognising themselves as the audience and responding to the policy brief, if they do not have influence they are keeping our ideas in circulation and potentially brokering knowledge to others who do. Furthermore, if the respondents in our study are representative of those on the periphery of a sophisticated influencing strategy, they may be contributing to knowledge circulation in ways previously underestimated.

5 Conclusions

The study set out to explore the effectiveness of a policy brief for creating evidence-accurate beliefs and prompting actions by its readers.

We find that the policy brief increases the proportion of respondents who have an opinion about the strength of evidence and effectiveness of two policies under discussion (bio-fortification and home gardens), and is more effective in creating evidence-accurate beliefs among respondents with no priors, than changing beliefs of respondents who already have an opinion. We find that with regard to beliefs, the impact of the policy brief seems to be independent of the specific form, meaning that the Opinion and Authority effects suggested by Jones and Walsh (2008) were not supported in this case.

Unsurprisingly, readers in this study were more inclined to report intentions and actual follow-up actions that require little effort or co-operation from others (e.g. revise and share the message of the policy brief). Findings about the types of actions readers carry out help to unpack further our assumptions about how knowledge continues to circulate which has implications for research communication. Interestingly, when it comes to actions we find that the form of the policy brief does matter – we find a clear Authority effect, and opinion-piece effect on readers' intentions to share the messages of the brief.

The study findings suggest a complex and yet unresolved interaction between readers and both opinion and Authority effects. At the very least we found no negative impact associated with the opinion and authority treatments, and some positive impacts. While further research is required to unpack these effects further, at this stage it would seem advisable for those working in research communication to consider including such features within policy briefs they are preparing.

Some other factors are also closely correlated to intended and carried out actions. In particular, being a woman is negatively correlated with most actions, while rating highly one's self-perceived level of influence is positively correlated with most actions. These findings require further exploration and could have implications for how we design policy briefs, how we target movers and shakers and how we enable women to act as knowledge brokers.

While we have established through this study that the effectiveness of research communication tools can be evaluated through an experimental study design we would not recommend this approach as

standard for evaluating *all* research communication activities in future. However, we would recommend further targeted studies to legitimise the significant spending on research communication approaches, to improve our understanding about what works in what situation to achieve research uptake and finally to further improve our knowledge about how best to evaluate complex processes of influence. The study does have limitations. Nevertheless, it can be considered a pioneer, and a contribution to what in the future may constitute a larger body of knowledge around how to best communicate evidence to influence policy.

Appendix 1: Round one qualitative interviews

The focus was on respondents who had signed up for the study, completed the immediate survey but failed to complete the 1-week survey.

Sampling process

Excel data was extracted for the immediate and one week surveys. A small macro was written to compare names, and extract the ones who did not appear on both lists. This was not very complete and we had no confidence in the output as some people had signed in with slight variants of their names. We therefore manually checked that the names on the list did not show on the one-week survey list. Having obtained a final list of 'immediate NOT one week' we highlighted every third name. Counting off 15 respondents we checked that they had indeed signed up for being contacted. Where a respondent had not opted in to being contacted we went to the next person on the list.

Email invitation

Once the final list of interviewees had been created, we identified their full 'sign in' response and 'immediate' response, and emailed them a personalised invitation to have a 10-minute conversation.

Subject: Research comms impact study – phone call?
To: Actual email address as on survey

Actual name of person as they put in survey (full name, no attempt to abbreviate or find first name only)
I would like to thank you for undertaking the survey after receiving the Policy Brief.
We have selected 10 respondents at random to have a brief 10 to 15 minute phone call with, to understand the context of your responses and to give you a chance to expand on some of your responses.
I would very much like to have such a conversation with you. I hope this might be acceptable and that I might ring you on Actual Number or contact skype address. Is there a particular time over the next 2 days that would be convenient to you?
Thank you for your response,

Regards
Name of researcher
Manager Impact and Learning Team

This message is for the addressee only and may contain privileged or confidential information. If you have received it in error, please notify the sender immediately and delete the original. Any views or opinions expressed are solely those of the author and do not necessarily represent those of IDS.

Institute of Development Studies
at the University of Sussex, Brighton BN1 9RE
Tel: +44 (0)1273 606261; Fax: +44 (0)1273 621202
IDS, a charitable company limited by guarantee:
Registered Charity No. 306371; Registered in England 877338; VAT No. GB 350 899914

The responses varied from 'call me anytime' to a specific time and date. In a couple of cases the time and date were not suitable and a subsequent email was sent asking for an alternative.

The phone call

A call was made using skype to call out, either to a mobile phone, landline or skype. In all but one case (Pakistan, to a mobile, and he was at a festival with significant background noise) the quality of the call did not affect the conversation.

1) After introductions and confirmation that the time was convenient, the interviewer thanked them for participating in the study and outlined how these calls were to provide context for their answers. They were asked to describe their organisation and work in brief.
2) Depending on the answer, the next question explored the relevance, or if the relevance was obvious because their programme of work was with Nutrition in Children, explored what they had taken away from the briefing e.g. 'So, how is the policy brief relevant to your work?', or 'So was there any particularly relevant items in the policy brief for your work?'
3) With the responses in front of the interviewer, if there had been a particular difference in their answers from sign-up to immediate, this was discussed by saying 'I notice that you seem to have gained some knowledge about cash transfers from the brief, do you recall how the brief helped you on this?'
4) Most respondents stated that the brief was good quality. The question was asked 'So I see that in the survey you thought the briefing was of good quality, what was it you liked about it?'
5) Some respondents had the Opinion piece. If they did they were asked 'The briefing had an opinion piece – did you find this added to your understanding of the subject? Do you feel the mix of facts and figures with opinion was balanced?'

6) Depending on the relationship established[28] during the conversation, the question was asked 'I notice that you didn't fill in the second one-week later survey, was there any particular reason for this?'

In some cases the 'thank you' for their country was looked up on the internet and some attempt was made to conclude the meeting in their local language. In two cases, the interviewer promised to send further information on related subjects (e.g. climate change).

A follow-up email was sent thanking them for their time.

Findings

In total, ten participants were interviewed at this stage in the study, with five either not responding to our invitation or responding positively but failing to connect. The interviews suggested that the primary reasons for non-participation in the 1-week survey were: not receiving an invitation for the 1-week survey or not understanding that the 1-week survey was different from the immediate survey and lack of time. Despite dropping out of this round of the study, many interviewees reported having taken follow-up actions to share information from the brief (Table 1.1).

Table A1.1 Round 1 qualitative interviews

BASIC BRIEF	Had email communication. Initially, she thought she hadn't participated in this study, but after several emails established she had. At this point, I thought it better to ask some brief questions via email rather than pursue a telephone interview. Retired Gender advisor for CIDA, working for a Women's Research Centre in South Asia. 'The exercise has a direct relevance in its application to the health, malnutrition and agricultural solutions and an indirect relevance in the context of investigating, looking into and choosing from among several options of direct and indirect solutions to development issues. I think there was some reference to a World Bank proposition with the warning that even suggestions from such bodies should be tested and re-tested. Ever so often the development worker is faced with the dilemma of following Policies and instructions from funders, governments and even NGOs which may not or are not the only or best solution to issues. This is not to exclude that the development workers themselves need to be equally exploratory. …'

[28] If the respondent was sending signals of deference to the interviewer, I felt I did not want to ask about why they didn't do the second survey because it felt like they were being 'policed'. Our ethics policies suggest that we should not make respondents feel uncomfortable unnecessarily.

	'Presuming that the reader is already familiar with the subject the detail is adequate.' 'I have the opportunity to pass on information from this briefing as the organisation that I work with currently is focused on research, advising, designing, selecting, planning and implementing development projects with a range of partners – government, non-government organisations as well as international agencies and funders.' **'I felt that my second questionnaire did not go through the computer (and it vanished!) and when I had no more responses I forgot about it!'**
BASIC BRIEF	Difficult poor quality line. Local NGO lobbying on Child Labour. Used briefing to support lobbying and general info. Briefing seen as more relevant to international work, so not passed on locally except for general info. No commentary so didn't ask. **No follow-up due to time.**
BASIC BRIEF	Lecturer on climate change and livestock. Briefing relevant to: good animals = good humans. Interested to be connected into climate change networks. Creates briefings and newspaper articles. Asked specifically about opinion: briefings should be a mix of facts and opinion. **Didn't ask about why not followed up.**
AUTHORITY OPINION PIECE	Local NGO (3 HQ staff, 5 in field) doing urban agriculture, vulnerable children – moved from institutional care to care in community. Briefing helpful for urban agriculture making people aware of the nutrition aspects of the work. Mix of facts and opinion workable – opinion grounded the ideas for her. **Lack of response was due to being out of Addis and then it was too late.**
AUTHORITY OPINION PIECE	Local NGO, struggling with funding. Briefing prompted interest in bio-fortification – went off and did further research and now developing a programme within their communities – may turn into a major theme of their NGO! Wanted more detail for the layman, thought the opinion piece was very helpful (had not heard of Lawrence Haddad – Authority Author). **Didn't remember seeing chaser email for 2nd survey, and so didn't do because wasn't aware.**
AUTHORITY OPINION PIECE	Lecturer in medical Sociology – HIV. Nutrition very relevant – particularly HIV and diabetes. Felt policymaking dominated by politics, example of messaging about male circumcision – no one listened to her qualitative research. Policy brief very well written and she is passing it on to colleagues. **Didn't follow through due to busyness.**
UNNAMED OPINION PIECE	Journalist in Northern Uganda. Writes in local language on development and health. Contributes to weekly paper associated with daily new vision paper, and weekly radio station. Used policy brief in a committee discussion on nutrition at an African

	University – deciding a national plan to get nutrition onto media agenda. (Had been trained by Panos on how to report on children). Really appreciated briefing, very well written. Saw the opinion piece as added value. **Didn't ask about why not second survey.**
UNNAMED OPINION PIECE	Spoke on very bad Skype line. Tried several times, call quality didn't improve, but pursued interview as best we could. Assistant Professor in Development Economics at a South Asian University. Conducts own research and teaches gender in development (and other subjects – didn't catch). Brief was very relevant as he did his masters on nutrition and rural poverty. Was very interested in the overlap of health/nutrition/agriculture research. Style of briefing 'wonderful' though he thought there was a lack of distinction in recommending why you should follow a particular policy/process. As from academic background thought brief needed more data to validate the conclusions, but for a general reader it was good. Would definitely pass on, as it was a good starting point for a researcher.
PLACEBO	Works in an education institute teaching women on low incomes how to undertake hospitality skills, in Venezuela. She found the brief interesting and easy to read and understand. She thought it would be more useful if there were examples from her local context as this would be directly relevant, though was interested in the global perspective (as the current political situation in Venezuela encourages introspection!) She was hoping that she might be able to implement some of the issues raised in the brief at a local level. She also has a couple of contacts in government – but was unsure whether this would come to anything. She has since tried to find out more details on the aims and goals of the MDGs especially in the Latin American context. She was happy with the balance of opinion and evidence though would obviously appreciate data from South America. **Didn't know about the third survey but would definitely have done it if she had seen it.**
PLACEBO	Disaster risk management advisor for Tearfund. Brief not directly relevant to his work as the MDGs don't address resilience or risk. Hasn't directly used or passed on brief, though has informed some initial organisational thinking on DRM issues post MDGs. Was a little concerned about lack of evidence in briefing – 'Practitioners accept a lot on authority' – though he would circulate it as it came from a credible source. The need for more evidence would depend on what the brief was used for. **Didn't see third questionnaire invite – would definitely have done it if he had seen it.**
UNNAMED	No response

OPINION PIECE	
AUTHORITY OPINION PIECE	Accepted by email. No interview achieved
PLACEBO	No response
BASIC BRIEF	No response
BASIC BRIEF	No response

Appendix 2: Round two qualitative interviews

Background and purpose

In summer 2011, IDS and 3ie commenced a joint study to explore the impact of a policy brief on short, medium and long-term outcomes for readers. The purpose of the study was to investigate (i) to what extent people would update their priors on the effectiveness of certain policies, and on the belief of the strength of the evidence; (ii) to what extent they would follow-up with any actions; and (iii) to what extent the type of actions undertaken would depend on having absorbed the content of the brief.

The trial included three different designs of the brief, in order to gauge whether including an opinion piece in the brief would make it more effective, and whether it matters whose opinion it is. Studies based on opinion surveys have indicated that this may be the case (Jones and Walsh 2008).

The main data collection tool for the study was a series of surveys administered through SurveyMonkey. In addition, we undertook two rounds of qualitative interviews. The initial intention was to use the qualitative interviews to explore in more depth the findings emerging from the quantitative aspect of the study. Instead, the two rounds of qualitative interviews explored:

(a) the reasons for high attrition rates observed between first and second intervention survey - we had concerns about the viability of the study if attrition rates continued to rise and wanted to identify any administration problems that may be causing attrition.

(b) examples of outcomes in six areas that had been hypothesised for the study – we were not trying to validate the quantitative findings through these interviews; rather we intended to gather in-depth insights to illustrate the study results. When we began the qualitative interviews results of the quantitative analysis were not yet available. Rather than delay the interviews and risk lower participation rates, we decided to use the interviews to gather examples of outcomes in four areas that had been hypothesised for the study.

This report documents the methods and findings from the second round of qualitative interviews.

Methods

As noted above, the reformed purpose of the interviews was to gather examples of change and stasis, action and inaction in four outcome areas that had been hypothesised for the study:

- Belief
- Behaviour – sharing information

- Behaviour – seeking information
- Behaviour – other action

Table A2.1 sets out the interview framework for the second round of qualitative interviews. We developed seven semi-structured questionnaires (see the end of this appendix), one for each cell in the framework.

Table A2.1 Interview framework

Area of inquiry	Interview schedules		
Belief ***Explore the role of the policy brief in changing belief or reasons for no change***	**Schedule 1a** Participants who overstated the effectiveness of bio-fortification and/or home gardens at baseline and continue to overstate after the intervention N – target 4 N – actual 5[29]	**Schedule 1b** Participants who changed from 'don't know' to forming an opinion on the effectiveness of bio-fortification and/or home gardens N – target 4 N – actual 3	
Inaction ***Explore the reasons for inaction***	**Schedule 2a** Did not take action but indicated an intention to act N – target 4 N – actual 8	**Schedule 2b** Did not take action and did not indicate an intention to act N – target 4 N – actual 3	
Action ***Explore the role of the policy brief in stimulating action, the nature of the action taken and the impact of the action – we are looking for***	**Schedule 3a** Shared information N – target 4 N – actual 12	**Schedule 3b** Sought additional information N – target 4 N – actual 7	**Schedule 3c** Other behaviour change N – target 4 N – actual 4

[29] Within cells, the number of actual interviewees corresponds with discrete individuals; across cells there is duplication as one interviewee may have provided information in more than one area.

'interesting stories' signalled in the 3-month survey			

An eligible interview sample was selected from the full cohort of study participants. To be eligible for interview, participants must:

- Have completed the 3-month survey;
- Be in one of the three treatment groups, i.e. not the control group
- Have opted-in to a follow-up interview by providing their telephone/skype details
- Fit the profile for at least one of the cells in the interview framework.

From the full eligible sample, we reviewed individual survey responses to identify 8–10 potential interviewees for each cell in the framework (Table A2.1). The selection was not random; we sought participants who we thought could provide an interesting story to illustrate the focus of the cell. While we were mindful to source interviewees from across the 3 treatment groups, this was not a driving factor in the sample selection.

The interviews were conducted via telephone/skype and took 10–15 minutes to complete. Most of the interviews were carried out between late December and early January 2011/2012, with a few conducted as late as February. While we intended to interview 4–5 participants in each cell, the actual numbers were lower due to:

- Difficulty identifying participants who fit the eligibility criteria and profile of some cells
- Lowering response rates as more time lapsed

In total, 24 participants were interviewed, with at least one interviewee identified specifically to fit the requirements of each cell in the interview framework. Many interviewees provided information that cut across more than one interview schedule, e.g. many participants who reported seeking information also volunteered that they had shared information, and this information was recorded accordingly.

Findings

Belief – stasis

Five interviewees maintained an overstated belief in the effectiveness and strength of evidence for bio-fortification and/or home gardens throughout the study period. Eliciting reasons for strong prior beliefs proved difficult, possibly because most of these interviews were undertaken several months after the intervention. For two of these interviewees their work did not touch on agriculture and/or nutrition. Respondent AH reported developing his prior beliefs based on reading done some time ago; and Respondent DN was not clear about how his belief was formed, but did have a strong opinion that 'bio-fortification is scientifically effective but socially unacceptable to much of the population in the developing world where it is needed'. Both of these interviewees had weak recall of the messages in the brief, and of the fact that the message of the brief did not support their views. It is likely that readers of a policy brief that deals with a topic not directly relevant to their work pay less attention to the messages it contains. In these two cases, the combination of prior belief and 'light' reading of the policy brief resulted in the policy brief not affecting any change.

Three further interviewees, whose work is directly related to agriculture and/or nutrition, also maintained an overstated belief about the effectiveness of bio-fortification and home gardens. Respondent UQ, Respondent DL and Respondent DP all had a stronger recall of the messages in the policy brief than Respondent AH and Respondent DN, possibly because the brief was more relevant to their work. Two of these interviewees (Respondent UQ and Respondent DL) did not recognise that the brief presented a more cautious message about the effectiveness and evidence for bio-fortification than they presented in their survey responses. Interestingly, both Respondent UQ and Respondent DL made comments in their interviews that suggested some conflicting views about the effectiveness of home gardens and bio-fortification, but any uncertainty was not apparent from their survey responses. In the case of Respondent UQ, during the interview he mentioned that he appreciated the succinct and non-technical style of the brief which he found easy to understand – perhaps there are other personality traits not visible through this study that drive beliefs and survey responses (e.g. appreciation of clarity and definitive answers).

The final interviewee who maintained a strong belief (Respondent DP) did recognise the disparity between his view and the message of the brief. He explained that his view was formed through experience and he thought the policy brief seemed to show up a lack of readily available empirical data for or against bio-fortification rather than disprove his prior belief.

Belief – forming

Three interviewees who reported no prior beliefs about the effectiveness and strength of evidence for bio-fortification and/or home gardens, formed an opinion throughout the study period. These interviewees all worked in areas that touched on agriculture and/or nutrition but had mixed recall of

the policy brief and its message. The interviewees variously reported that the policy brief had a large influence by helping to 'close the knowledge gap' (Respondent SL), some influence by prompting further research on these issues (Respondent MB), and an unknown level of influence as recall of the policy brief was low (Respondent HA). Interestingly, the latter interviewee volunteered that the reason for her lack of knowledge was because she has not witnessed many nutrition-related interventions and the only field intervention she has witnessed in the area of nutrition was not effective or sustainable. While the other two respondents mentioned the internet and websites and reports of major international bodies, but not personal experience when asked where they get information. Perhaps these interviews suggest a link between the types of information a reader draws on for forming their beliefs and their level of recall of a policy brief.

Belief – reforming

While we did not create a specific interview schedule to explore reformed beliefs, five interviewees of other schedules did provide information in this area. Four interviewees downgraded a previously overstated belief (Respondent NiS, Respondent GL, Respondent KS and Respondent ED) and one interviewee developed an overstated belief in the effectiveness and evidence for both bio-fortification and home gardens following the intervention (Respondent NS). All of these interviewees may have been influenced in their views by information beyond the policy brief and only two credited their change in belief to reading the policy brief (Respondent ED and Respondent NS). Other influencing factors included a BBC radio programme (Respondent NiS) and personal hands-on experience:

> *It was probably more to do with experience I had gained subsequently in actual practical work I had done. I had done some focus groups with farmers at that stage (3 months after reading the policy brief) so I think it (change in opinion) was a general reviewing of the situation in the light of practical observations and experience. (*Respondent GL*)*

Clearly readers are continually exposed to information that has potential to influence their beliefs, which reinforces the value of an RCT approach for this study.

No intention to act

Three interviewees did not report any intentions to act after reading the policy brief. For two interviewees whose work does not touch on nutrition and/or agriculture, lack of relevance was the main reason they gave to explain a lack of intention to act. However, lack of relevance alone cannot fully explain a lack of intention to act – many other participants whose work does not touch on agriculture and/or nutrition (and for whom the policy brief may not be relevant) still took some action including sharing the policy brief with someone else. It is likely there are personality or work pattern

factors not visible through this survey that also influence intention to act (for example, whether somebody is part of a diverse knowledge sharing network and values knowledge received in this way).

The third interviewee's work does touch on nutrition and/or agriculture, and while he did find the brief to be relevant he reported that it did not encourage him to act because in his view it was very vague and did not seem to be coming to any conclusions.

Intention to act – unfulfilled

Eight interviewees had not been able to fulfil actions they had intended, and we asked them why. The barriers to low intensity actions (like sharing and seeking information) can be grouped into three categories:

- Action not a high priority for the participant e.g. lack of time, being too busy, forgetfulness. This was particularly relevant for interviewees, whose work does not touch on nutrition and/or agriculture, reinforcing the assumption that relevance is related to priority.
    - Respondent DB said that she initially found the brief interesting and thought she would read it earlier. However, she feels she didn't end up reading it because it did not tie in with her research interests in any way.

- Actions aborted if they are not easy to complete – policy brief format did not make it easy to source original information (i.e. no hyperlinks); because the policy brief was received through a study it was not easy to 'find' again later; lack of connectivity making sourcing and sharing information slow. Some practical recommendations for ease of access may be relevant for those developing policy briefs.
    - Respondent DS said that the policy brief was good in that it outlined the major areas requiring focus in nutrition interventions, but it did not provide easy access to the source articles that were behind the review. She felt that the original sources could have been made more accessible (through the provision of direct web links to the material for instance) in the brief.

- A window for action does not open within the time frame – lack of opportunity to apply insights in work, fading visibility of the policy brief and its message. Again, practical recommendations for maintaining the visibility of the policy brief 'brand' may keep messages alive in readers' minds.

- Respondent CJ had intended to re-read the policy brief and change his methods of evaluating research interventions, but was not able to do so at the time of the last survey. He explained that the obstacles to these actions were lack of an opportunity to allow him to apply the insights from the policy brief in practice. He indicated that there was a danger that if he didn't have an opportunity to put them into practice, they will 'drift off his agenda'.
- 'A lot of it is about time; I deal with and process a large amount of information on a daily basis. So unless something is particularly relevant to something that I am doing at that time, then I don't have time to pursue something further'. (Respondent GL)

Three interviewees (Respondent AH, Respondent UQ and Respondent KS) had been unable to complete higher intensity actions, such as reviewing one's approach to evaluating agriculture interventions and changing policies regarding agriculture and nutrition within one's organisation. In all three cases, the intended action required the interviewee to act beyond his/her immediate sphere of control, and they needed to influence other people in their organisation to make this change happen. Interviewees reported organisational bureaucracy, entrenched attitudes, diverse opinions and rigid programme cycles as barriers to them achieving these higher intensity changes. This is perhaps not surprising given what we know about the multiple factors that affect research influence on policy and practice.

Actions fulfilled

Interviewees reported a number of actions completed within the study period that we have grouped into three categories: (a) sharing information, (b) seeking information, (c) other behaviour.

Actions fulfilled – sharing information

Twelve interviewees shared information contained in the policy brief through email and face-to-face discussions with:

- existing information sharing networks who may have a general interest in the topic
  - e.g. Respondent MB – he also indicated that he did his masters in natural resource assets and management and his colleagues from that course all belong to an email list, and he usually forwards information to this email list
  - e.g. Respondent NS – she currently belongs to an informal network of development researchers (mostly made up of colleagues and friends working in development), and she indicated that this was a motivation to share the information within the policy brief.

- particular individuals (including friends and family) who have a specific interest in the topic
    - e.g. Respondent GL shared the policy brief with one of her clients, a country coordinator of an organisation that works on nutrition and agriculture (they breed and disseminate vitamin A fortified maize). She shared it with her client because 'she thought it was interesting and had direct relevance to what they were doing'.
    - e.g. Respondent SK shared the policy brief with a friend who was a PhD student studying health management, a colleague who is doing research on natural resources in development, and a friend doing gender research.
    - e.g. Respondent UQ, shared with brother who is a nutritionist

Regarding the format for sharing information, Respondent GL mentioned that though she regularly disseminates information through formal methods like a research report or press release, if she feels that it is directly relevant, she does it through more informal means, emails and verbal discussions.

For the most part, interviewees shared the information from the policy brief because they thought the content would be of interest to others. In addition, one interviewee reported that they also thought the format was of interest e.g. Respondent AH shared the policy brief with 22 colleagues because it provided a format for writing policy briefs: 'the information was contained within a policy brief and we also write policy briefs. It was a good example on how to augment your arguments and make it strong'.

Actions fulfilled – sourcing information

Seven interviewees sourced more information, either by following up the reference contained in the policy brief or searching out a wider collection of information related to nutrition and/or agriculture. All of these interviewees indicated that their work does touch on agriculture and/or nutrition, although for one interviewee this was not his primary field. In particular, interviewees sought more information because:

- the policy brief peaked their interest in the topic but was not sufficient for their needs:
    - e.g. Respondent ED sought out more information in order to find more sustainable and affordable agricultural interventions than what was outlined in the policy brief. He felt that the agricultural interventions mentioned within the policy brief, like bio-fortification were too expensive for rural farmers.
    - e.g. Respondent MB indicated that because he works in academia, it is always necessary to find more information to expand his knowledge. Also, he teaches an undergraduate course in Agriculture that is related to most of the issues covered

by the policy brief. Hence, he had to do more research to be able to share enough information in his classes.

- the policy brief presented a particular perspective and they wanted to make their own a judgement based on the source information
    - e.g. Being a researcher, Respondent DS was of the opinion that sourcing the background research behind such briefs is important as there often exists a gap between the researcher and those conducting the systematic review, who have their own biases. She spoke of research she had conducted earlier on female access to credit under contract with a major multilateral organisation, which she said was moulded by the multilateral through a review process to suit its own organisational goals.

- The policy brief challenged their existing position and they wanted to verify the findings through other sources
    - e.g. Respondent AH: '...the issue is that before I read the policy brief, I didn't even know that bio-fortification is still contentious. The government of India is talking in terms of using bio-fortification to increase nutrition levels in rural areas as a proven method. When I read the policy brief, I realised that it is actually not as proven as it seems, so when I went to 'google' some of the papers to see what were the options, I was surprised to see that it's actually not a very widely accepted practice yet, but the government of India is still going ahead with it and has actually launched a rough pilot to see... bio-fortification effects on nutrition in children'.

For the most part, interviewees used online tools for seeking out information, but one interviewee reported seeking out more information through discussions with the Nutrition advisers in his office and partner organisations (Respondent ED).

Actions fulfilled – other actions

Four interviewees reported taking other actions within the study period. All of these interviewees reported that their work does touch on agriculture and/or nutrition. The four actions are reported below.

Respondent DL – Researcher/Lecturer in Malaysia

Respondent DL indicated in her follow-up survey that she altered some of her recommendations on food security following her reading of the policy brief. When asked about this, she said that it was the policy brief's nuanced take on bio-fortification that was of particular interest to her. Previous sources of knowledge on bio-fortification that she had been reading had very extreme opinions in their presentation of biotechnology – either completely for or completely against it. The policy brief, however, according to Respondent DL, pointed out that bio-fortification may solve short-term problems but may not necessarily have a significant long-term impact. This aspect of the brief was what Respondent DL incorporated into her studies, to indicate that something else, additional to bio-fortification must be done, and focus should not just be on short-term solutions. Further, Respondent DL incorporated the figures provided in the research in the brief on children and food security.

Respondent MC – Country Director of Malawian (NGO)

When asked about his follow-up action, Respondent MC responded that the brief's information on bio-fortification was useful in terms of providing them with information to help develop a new approach to giving children bio-fortified foods. He said that the research in the brief was very useful information that he also ended up sharing with partners working in the field. Much of the research sourced in the brief relating to bio-fortification was new to him and he wanted to be able to apply it to the work he did to gauge its effectiveness for himself.

Respondent GA – Researcher/Lecturer in Nigeria

Respondent GA said that she works periodically with the Ministry of Agriculture, in terms of giving them policy evaluation assistance. She says that she used the brief and the source information as the basis on which to assess the instruments the ministry was using for evaluations and then adapted the ministry's existing evaluation instruments accordingly when going into the field. She says that the brief helped her determine what information from the field was needed when evaluating agricultural extension interventions.

Respondent HH – Consultant/Part-time PhD candidate/Lecturer

When asked about how she changed aspects of her lecture, following her reading of the policy brief, Respondent HH responded: 'I'm teaching a postgraduate course that is preparing German masters students for working in Development corporations. Within this, I'm teaching a module on pro-poor growth for which I'm using case study material from East Africa. As an agriculture person I am very much into agriculture and rural poverty. After reading the brief, I included nutrition as an added and separate area to be looked at on the intra-household level, rather than something subsumed within agriculture and being of secondary importance.' Respondent HH stated that the information she had been receiving from IFPRI in recent times was already pointing her towards the need for focusing on nutrition security when looking at rural poverty, something she felt she had overlooked earlier. The policy brief reinforced this for her.

The four reported actions are commensurate with the areas of responsibility that each interviewee has – i.e. they were able to act within their immediate sphere of control without requiring agreement or sign-off from others. This is perhaps a reason for them being able to complete the action within a relatively short time period.

Actions fulfilled – effectiveness

We asked interviewees how completing an action (sharing information, sourcing information or another action) had influenced their effectiveness in their work. Their responses showed a variety of effects that can be grouped into direct research communication outcomes and indirect knowledge intermediary outcomes:

- Direct research communications outcomes relate to use of the specific knowledge/ideas contained in a research communications output, e.g.
    - Using evidence from the policy brief to support advocacy actions Respondent KS;
    - Using evidence from the policy brief to apply new approaches in one's work - Respondent GC re: applied nutrition interventions, Respondent NS re: evaluation methods;
- Indirect knowledge intermediary outcomes are somewhat of a by-product of the research communication itself – they relate to changing views about the value of knowledge, or use of knowledge for outcomes that don't relate directly to acting on the recommendations or content:

- The message Respondent NiS learnt was the need to 'take a broader look at things before drawing assumptions' and that has influenced his work;
- Prompting more discussion about an issue, that may or may not challenge the message of the brief – Respondent UQ;
- Gaining a broader knowledge of the topic improving general confidence to engage in discussion of an issue – Respondent UQ felt more confident engaging with nutrition experts from UNICEF, WFP and other multilaterals because of the policy brief, in a meeting (on nutrition) he had last week;
- Use of the knowledge product to substantiate a connection or relationship with someone else – Respondent CJ, Respondent GL~~.~~, Respondent CJ shared the information within the policy brief with a professional colleague he met at an Agricultural Knowledge Share Fair. He mentioned that they were having a conversation on gender issues and nutrition, and the knowledge he gained from the policy brief allowed him to provide informed insights on the topic. He then offered to forward the policy brief to the colleague as a result of the conversation.

The Authority effect

Where interviewees were part of a treatment group that received a policy brief plus opinion piece, we tried to ascertain whether they were conscious of any 'Authority effect' at play. For interviewees who received the opinion piece credited to Lawrence Haddad we asked the extent to which they thought Lawrence's name/reputation had influenced their reading of the policy brief (seven interviewees).

Of the three interviewees who had no prior knowledge of Lawrence Haddad, two could also not recall the opinion piece. The remaining interviewee is familiar with IDS and said that if he had known Lawrence Haddad was Director of IDS this would have influenced his reading of the opinion piece (Respondent MB). Four further interviewees did have prior knowledge of Lawrence Haddad, both personal and through his written work. These interviewees had mixed views about whether Haddad's authorship influenced their reading –

- Two interviewees thought it had little influence on their decisions to act (Respondent NS and Respondent GA);
- Two interviewees claimed it had influenced their reading of the brief, giving it more weight or conjuring assumptions about what Lawrence might say (Respondent HH and Respondent CJ respectively).

The latter interviewees seemed to have the greatest depth of knowledge of Lawrence Haddad and his work, perhaps suggesting there are degrees of influence achieved by degrees of awareness.

For interviewees who received the opinion piece credited to an unnamed IDS fellow, we asked the extent to which they thought Lawrence Haddad's name/reputation would have influenced their reading of the policy brief if they had known he was the author (seven interviewees). Four of these interviewees had no prior knowledge of Lawrence Haddad and only one of them felt that crediting the opinion piece to Haddad would have influenced their reading of the brief (Respondent UQ). As with Respondent MB, while not familiar with Lawrence Haddad Respondent UQ is familiar with IDS' work and he thought that knowing the opinion piece was authored by the Director of IDS, he would have 'engaged with it more'.

The remaining three interviewees were familiar with Lawrence Haddad prior to the study and all agreed that knowing he had authored the opinion piece would have changed their reading and recall of the brief, if not their resulting actions.

Interview schedules

Schedule 1a – Knowledge (no change)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. Over the period of the study you seem to have maintained your position regarding (particular nutrition intervention(s)).

a) Could you tell us more about how you formed your position on this issue?

b) The policy brief presented a different position about the effectiveness and evidence for (particular intervention): Did this have any influence on your position?

i) If yes, why did this policy brief have an influence?

ii) If not, why do you feel it did not influence you?

If treatment group 2 THEN:

Q 4. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) Did his authorship of the opinion piece affect your reading of it?

If treatment group 3 THEN:

Q 4. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Schedule 1b – Knowledge (acquired opinion)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. Over the period of the study you seem to have changed your position regarding (particular nutrition intervention(s)).

a) Could you tell us more about why your position changed in this regard?

b) Prompt if they haven't mentioned it: Did the policy brief have anything to do with it?

i) If yes, why did this policy brief have an influence?

ii) If not, why do you feel it did not influence you?

b) Prompt if they only mention the brief: Were there any other factors that contributed to your change in position?

If treatment group 2 THEN:

Q 4. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?
b) Did his authorship of the opinion piece affect your reading of it?

If treatment group 3 THEN:

Q 4. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad

a) Were you already familiar with his work when you read it?
b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Schedule 2a – Inaction (Intended but no action)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. When you completed the first feedback questionnaire, you indicated an intention to do but later you said that you hadn't taken any action.

a) Why did you feel that was a useful act to perform in the first place?
b) What stopped you from performing this action (intended action)?
c) Could there have been anything particularly different about the policy brief that may have led you to prioritise the action?
d) Were there any other factors influencing your decision not to act on what you intended?

If treatment group 2 THEN:

Q 4. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?
b) Did his authorship of the opinion piece affect your reading of it?

If treatment group 3 THEN:

Q 4. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Schedule 2b – Inaction (no intention to act)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. In your response to the first feedback questionnaire you indicated that you did not intend to take any follow-up action after reading the policy brief:

a) Why you did not consider taking any particular action?
b) Could there have been anything particularly different about the policy brief that may have led you to consider any action?
c) Were there any other factors that made you decide to not consider action (Not relevant to your work/interests, unclear with regard to how you could have acted?)

If treatment group 2 THEN:

Q 4. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?
b) Did his authorship of the opinion piece affect your reading of it?

If treatment group 3 THEN:

Q 4. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad.

a) Were you already familiar with his work when you read it?
b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Schedule 3a – Action (Shared Information)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. In your response to the final questionnaire of the study, you indicated that you had shared information with someone else (refer to own words for description).

a) Could you tell us more about the information sharing process? (Who did you share it with, for what purpose)
b) Why did you decide to share information? Prompt for – do you always share such information / was this business-as-usual?

c) Was there anything particular about what you read that prompted you to share the information?
d) Were there any other factors that caused you to share the information (prompts: relevance, networks, interests)?

Q 4. What difference do you think this will make to the effectiveness of your work (whatever it is you're trying to achieve in your work)?

If treatment group 2 THEN:

Q 5. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?
b) Did his authorship of the opinion piece affect your reading of it?

If treatment group 3 THEN:

Q 5. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad.

a) Were you already familiar with his work when you read it?
b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Schedule 3b – Action (Sought more information)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. In your response to the final questionnaire of the study, you indicated that you had sought more information since reading the brief (refer to own words for description).

a) Could you tell us more about your attempt to seek further information? (From where? On what?)
b) What prompted you to seek more information? Prompt for – something in the brief/business-as-usual? Prompt for whether there anything particular about what they read that caused them to inquire further into it (completeness, trustworthiness, format, style)?
c) Were there any other factors that caused you to look for more information?

Q 4. What difference do you think this will make to your effectiveness in your work (whatever it is you're trying to achieve with your work)?

If treatment group 2 THEN:

Q 5. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) Did his authorship of the opinion piece affect your reading of it?

If treatment group 3 THEN:

Q 5. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Schedule 3c – Action (Other)

Q 1. What is your role in relation to agriculture and nutrition?

Q 2. Where do you get most of your information about these areas? In recent times?

Q 3. In your response to the final questionnaire of the study, you indicated that you had taken some action as a result of reading the brief (refer to own words).

a) Could you tell us more about your (other action)?

b) What prompted you to take this action? Prompt for Was there anything particular in the policy brief that prompted you to perform this action?/Were you intending to do this anyway?

Q 4. What difference do you think this will make to your effectiveness in your work (whatever it is you're trying to achieve with your work)?

If treatment group 2 THEN:

Q5. The policy brief included an opinion piece by Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) Did his authorship of the review affect your reading of it?

If treatment group 3 THEN:

Q 5. The policy brief included an opinion piece by an anonymous author. The author was a Researcher named Lawrence Haddad.

a) Were you already familiar with his work when you read it?

b) If you had known the author was Lawrence Haddad, would this have affected your reading of it?

Appendix 3: Persistence of change in beliefs

Table A3.1 Difference in difference over four survey rounds with fixed effects

	Bio-fortification		Home gardens	
	coefficient	**P-value**	**coefficient**	**P-value**
		Evidence ratings		
Constant	2.57***	0.000	2.87***	0.000
2nd round	-0.19	0.205	-0.38***	0.001
3rd round	-0.12	0.551	-0.32**	0.037
4th round	0.17	0.522	-0.22	0.271
DD	-0.14	0.105	0.04	0.562
Observations	61		92	
		Effectiveness ratings		
Constant	2.54***	0.000	2.80***	0.000
2nd round	-0.01	0.986	-0.13**	0.037
3rd round	0.10	0.411	-0.14*	0.086
4th round	0.09	0.594	-0.16	0.135
DD	-0.07	0.285	0.03	0.496
Observations	74		123	

Table A3.2 Difference in difference over four survey rounds with fixed effects

	Dairy development		Small-scale fisheries	
		Evidence ratings		
Constant	2.63***	0.000	2.57***	0.000
2nd round	0.13	0.324	-0.29**	0.026
3rd round	0.31*	0.095	-0.13	0.458
4th round	0.40	0.108	0.01	0.952
DD	-0.17	0.071	0.02	0.795
Observations	68		74	
		Effectiveness ratings		
Constant	2.52***	0.000	2.70***	0.000
2nd round	0.10	0.218	-0.12*	0.080

3rd round	0.15	0.195	-0.08	0.382
4th round	0.02	0.874	-0.06	0.606
DD	-0.03	0.609	-0.03	0.473
Observations	89		103	

Appendix 4: Further qualitative analysis

Question 5 of the Immediate feedback questionnaire asked respondents 'In your own words, what is the key message of the policy brief?' We undertook thematic analysis of 90 survey responses to this question, to explore the extent to which respondents could identify and recount a key message, as this is a key factor in information sharing, and to test for the effect of an opinion piece on the recipient's understanding of the key message.

Sampling

The *sample population* included all study respondents who completed the full immediate feedback questionnaire for the joint IDS-3ie study of the impact of research communications. The sample population was divided into three groups, based on the three treatment groups for the overall study, and a systematic random sampling was done within each group, where:

- N/n= nth number sampled;
- N= Total number of sample population;
- n= total number of sample wanted.

Coding

When it came to analysing responses to this question we discovered the treatments themselves contained a number of complex and nuanced messages, and it was not always clear which were 'key'. To complete the qualitative analysis we coded a sample of responses according to whether they had noted the following points:

Key messages included in the basic policy brief:	Key messages unique to the view point:	Key messages reinforced by the view point:	Other messages that arose frequently during coding:
NoM: nutrition-focused agricultural interventions alone will not eradicate malnutrition	IFNA: Invest fully in nutrition-focused agriculture – solely from viewpoint	BioFNP: Bio-fortification can help but not yet a proven solution	ChiNu: Issues surrounding child malnutrition, (identification as the key problem, focus of interventions)
CiVC: Identifying vulnerable children	AgIS: Learn from nutrition-focused	PNIE: Insist on proper nutrition	BioFNPN: Incorrect understanding of the

and finding ways to ensure their participation in nutrition programmes.	agriculture how to make agricultural interventions more nutrition sensitive-solely from viewpoint	Impact evaluation and research before funding and implementation by policymakers	key message about Bio-fortification
BioFNP: Bio-fortification can help but not yet a proven solution			HuN: Hunger and Nutrition focus only
IHC: Increasing Overall Household Income			

Responses were coded by one reviewer based on the key messages above; phrases were sorted through and coded based on inclusion of certain key words and ideas. Responses could include reference to more than one key message. Specific details about the coding of each message are available on request.

Limitations

The policy brief contained a lot of key messages and information which made it difficult to analyse for specific responses towards the viewpoint. The coder's understanding of certain phrases and use of the codes like 'BioFNPN' is limited by her understanding of the literature. It is also limited by her knowledge of the subject matter and is taken without a deeper understanding of the respondents' backgrounds.

Key findings

Table A4.1 above shows the frequency of key messages identified by respondents. A more detailed breakdown is at the end of this Appendix.

Table A4.1 Frequency of key messages identified

Code	Basic policy brief	Authority opinion piece	Unnamed opinion piece	Total
FREQUENCY OF KEY MESSAGES UNIQUE TO THE opinion piece				
AgIS +/- other codes	0	0	0	0

IFNA +/- other codes	0	3	0	3
FREQUENCY OF KEY MESSAGES REINFORCED BY THE opinion piece				
PNIE+/-other codes	9	11	8	28
BioFNP+/- other codes	3	2	3	8
FREQUENCIES OF INFERENCES MADE NOT EXPLICITLY CONTAINED WITHIN THE POLICY BRIEF				
BioFNPN+/- other codes	3	1	4	8
EPO+/- Other codes	4	2	7	13
FREQUENCIES OF GENERIC CODES (ChiNU and HUN)				
ChiNu+/-Other codes	8	7	11	26
HuN+/- Other codes	10	3	6	19
FREQUENCIES OF MESSAGES NOT REINFORCED BY THE opinion piece				
IHC+/- Other codes	6	0	0	6
NoM+/-other codes	4	6	2	12
CiVC +/-other codes	2	2	0	4

Identify and recount key messages: Analysis showed a lot of variation in respondents' ability to identify and recount the key messages in the treatments. Across the sample as a whole, the mostly commonly identified messages related to:

- a key message in the basic brief that was also reinforced in the opinion piece: insist on proper nutrition Impact evaluation and research before funding and implementation by policymakers (28/90), and;
- a generic issue: child malnutrition, e.g. identification as the key problem, focus of interventions, (26/90)

The group who received the basic policy brief were also likely to identify messages with focus on generic Hunger and Nutrition issues only (10/30). **The multiple and nuanced messages in the treatments may have led to the lack of clear pattern or consistency in responses.**

The 'Authority effect': Testing for the Authority effect was difficult, as key messages overlapped throughout both the policy brief and the opinion piece. However, AgIS and IFNA were very unique to the opinion piece. Respondents within the groups that had the opinion piece were the only ones who identified these as key messages. In total, only 2 (2.2 per cent) respondents out of 90 identified AgIS as a key message. This makes up 3.3 per cent of the population that received the opinion piece. The two respondents had received the opinion piece, 1 was from the 'Authority group' and the other from

‘the unnamed IDS research fellow group’. For IFNA, only 3 (3.3 per cent) respondents out of 90 picked this as a key message. All the respondents were from the ‘Authority group’ (10 per cent of the ‘Authority’ population). They make up 5 per cent of the entire population that received the opinion piece.

Other key messages, not coded: Often, rare responses that are inferences from the brief and opinion piece as opposed to key messages arose within the sample. Those inferences were mostly policy focused. They made up 14.4 per cent of all the key messages identified; 30.8 per cent of these responses were about policy implementation or formulation. A large percentage of this group was made up of respondents who received the opinion piece from the unnamed IDS fellow, totalling about 53.8 per cent of all the responses in this group. They occasionally referred to maternal health and sometimes to multi system approaches, policy formulation and implementation and coordination. Sometimes they referred to participatory approaches. No distinct explanation could be noted for them, as they did not occur a lot within the ‘Authority group’ (15.4 per cent) as compared to the other groups with (53.8 per cent) or without (30.8 per cent) an opinion piece. They occurred across groups. More knowledge about other face codes e.g. gender, job positions, academic background might be helpful in identifying the reasons.

Child malnutrition and necessary interventions occurred as a key message through the responses. 26 (28.9 per cent) out of 90 respondents identified this as one of the key messages. A large percentage of this was among those who got the opinion piece from an anonymous source (42.3 per cent), followed by those without the opinion piece (30.8 per cent) and finally those with the Authority opinion piece (7 per cent). However, this will be expected as the policy brief focused on child malnutrition with images to reinforce its messages.

Hunger and nutrition identified as the key message solely was seen more in the group that was not given the opinion piece (50 per cent) and rarely in groups that received the opinion piece [Authority (20 per cent), unnamed fellow (30 per cent)]. It is possible that the reinforcement of certain points in the opinion piece helped in bringing other key messages into focus.

Misunderstanding of Bio-fortification: Bio-fortification as a key message was often misunderstood. This rang true for all the respondent groups. Among respondents who had the opinion piece from an unnamed fellow, about 23 per cent identified bio-fortification as a key message; 55 per cent of those respondents misunderstood the information. Among respondents who did not receive the opinion piece, about 20 per cent identified bio-fortification as a key message and 50 per cent misunderstood the information. Among respondents who received the Authority opinion piece, 10 per cent identified

it as a key message and only 33 per cent misunderstood its meaning. There may or may not be a significant correlation. Further analysis is needed to explore the relationship.

Need for more research was an underlying theme that reoccurred across most of the sample population (28 (31.1 per cent) out of 90 respondents). However, the group with the Authority opinion piece identified PNIE more as a key message (39.3 per cent). Among those who identified PNIE alone as a key message, the Authority group was greatest (50 per cent), followed by the group with an opinion piece from an anonymous source (33.3 per cent). It is possible that the opinion piece might have reinforced this message more clearly than the basic brief.

Increase of household income was a key message seen in respondents without the opinion piece only. Increase in overall household income (6 out of 90 respondents) was often identified as a nutrition intervention directly related to child malnutrition or as an intervention that had to be evaluated more for its significance.

Interestingly enough, other key messages not reinforced by the opinion piece (NoM and CiVC) were seen in both the Authority group and the group without an opinion piece, but not in the group with an opinion piece from an unnamed fellow source. These are points illustrated and expanded within the policy text; an insight into the background of the respondents might explain these differences more.

Multiple key messages: The population without the opinion piece mentioned more multiple key messages in one answer, often in combination with other generic messages. Basic policy brief (63.6 per cent), Authority opinion piece (27.3 per cent), unnamed fellow opinion piece (9.1 per cent). Multiple key messages were found in 11 (12.2 per cent) responses out of 90. The definition of multiple key messages was if respondents mentioned more than one key message with or without other generic messages.

Conclusion

From this brief qualitative analysis, an inclusion of an opinion piece seemed to help in reinforcing certain key messages more than others. Respondents who did not receive an opinion piece tended to identify other key messages within the text of the policy brief. However, there is a need for more qualitative analysis of the respondent's background to give better context. It was difficult to assess if having an opinion piece by an Authoritative source as opposed to one by an anonymous researcher made a difference. More qualitative analysis of other characteristics of the respondents might give a better picture of its significance.

Table A4.2 Detailed breakdown of key messages identified by respondents

Code	Basic policy brief	Authority opinion piece	Unnamed opinion piece	Total
FREQUENCY OF KEY MESSAGES UNIQUE TO THE opinion piece				
AgIS only	0	1	1	2
AgIS +/- other codes	0	0	0	0
IFNA only	0	2	0	2
IFNA +/- other codes	0	3	0	3
FREQUENCY OF KEY MESSAGES REINFORCED BY THE opinion piece				
PNIE+/-other codes	9	11	8	28
PNIE only	2	6	4	12
BioFNP + PNIE only	0	1	0	1
BioFNP+/- other codes	3	2	3	8
BioFNP only	1	1	2	4
FREQUENCIES OF INFERENCES MADE NOT EXPLICITLY CONTAINED WITHIN THE POLICY BRIEF				
EPO+/- Other codes	4	2	7	13
EPO only	2	1	2	5
EPO +/- (policy implementation)	1	0	3	4
BioFNPN+/- other codes	3	1	4	8
BioFNPN only	0	1	3	4
FREQUENCIES OF GENERIC CODES (ChiNU and HUN)				
ChiNu+/-Other codes	8	7	11	26
ChiNu only	2	3	5	10
ChiNu+ HuN only	1	0	0	1
HuN+/- Other codes	10	3	6	19
HuN only	5	2	3	10
FREQUENCIES OF MESSAGES NOT REINFORCED BY THE opinion piece				
IHC+/- Other codes	6	0	0	6
IHC only	0	0	0	0
NoM+/-other codes	4	6	2	12

NoM only	4	5	0	9
CiVC +/_-other codes	2	2	0	4
CiVC only	0	0	0	0
NoM+CiVC+IHC only	0	0	0	0
CiVC + IHC	1	0	0	1
FREQUENCIES OF MULTIPLE KEY MESSAGES IN ANSWERS				
Multiple key messages(>1) +/-other codes	7	3	1	11
Multiple key messages alone	3	3	0	6

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