Research uptake - do our communication habits stand in our way?

Nick Q Nathaniels
DDRN 10th Annual Assembly
28 January 2015
contents

▶ Plant pathology - learning through experiencing

▶ Habits, research and communication concepts
  ▶ UK 1980s
  ▶ Tanzania 1990s
  ▶ Tanzania & Malawi 2012/14

▶ Shortcomings, improvements

▶ Useful ‘new’ concepts, gaining ground?
  ▶ research v. innovation?
  ▶ expanding communication4D?

▶ Implications - new roles?

▶ Examples from DFID-funded work
▶ Useful tool for planning communication4D?
PLANT PATHOLOGY

Disease -> negative effects on plant growth, yield and quality

- living (micro) organisms and other factors that cause plant disease
- mechanisms of disease
- control or management of plant disease
My training as a plant pathologist

- biology, botany, microbiology, virology, epidemiology, chemistry, biochemistry, agronomy
- field and laboratory experiments
- statistical and other analyses
The only communication training received was in this excellent plant pathology manual.
Plant pathology for me was a very practical research field

- pose questions - obtained through reading, peer discussion, some direct interaction with farmers
- gather data - e.g. fungi, disease spread, crop yields, environments, genetics, test control options
- analyse and reflect
- document  -> pose new questions
Communicating results was through:

- journal articles - theses etc.
- presentations at research conferences
- fact sheets
- (press releases and contributions to trade magazines)
Research Impact

**CONCEPTUAL USE**
- Awareness
- Knowledge & understanding
- Attitudes, perceptions, ideas

**INSTRUMENTAL USE**
- Practice & policy change

*Expected our work to bring about change in practice on farms - instrumental use*

Adapted from Sandra Nutley
Information on Validated Research solutions

CONCEPTUAL USE

Channel or disseminate to user

Awareness 
Knowledge & understanding

Attitudes, perceptions, ideas

Change in Practice 
& policy change

INSTRUMENTAL USE

Assumed that knowledge generated through the experience of research could be shared in written form, which would then bring about change in practice.

Adapted from Sandra Nutley
EXPERIENCES from WORK

communication habits uncovered?

Shortcomings?
Improvements?
Experiences from three settings

- UK - agricultural advisory service 1980s
- Tanzania - cashew disease research 1990s
- Tanzania & Malawi - aflatoxin awareness in groundnuts 2011-14
Agricultural development & advisory service

- UK

- researcher role - develop disease control solutions
- agricultural (extension) advisors <-> farmers
  - University educated (agronomy)
  - Supplementary training - educators & communicators
  - On-the-job experience - interacting with farmers, private sector, media
  - Active in seeking information (from us, from other sources)

- advisors channelled information from farmers to us - topics for more research, follow-up studies etc.
- we communicated (print, information meetings)
- No one challenged our practice - no need for change
Researcher to advisor links strong
Advisor-farmer links strong

Figure 2. ‘communication as dissemination’ (research to farmer - coloured boxes) in the innovation process.
As a researcher, I was less concerned with the many other sources of information, advice, social and other pressures that could influence choices made by farmers - see red arrows.

We as researchers were cocooned within a reasonably well functioning system; our communication practices and habits seemed to work well because they were mediated through efficient intermediaries - the agricultural advisors (public extension).
Experiences from three settings

- UK - agricultural advisory service 1980s
- Tanzania - cashew disease research 1990s
- Tanzania & Malawi - aflatoxin awareness in groundnuts 2011-14
Tanzania - cashew research

- research purpose: find ways to control cashew powdery mildew

- agricultural advisory (extension) service: less well resourced, less well trained, fewer facilities - very different farming contexts than in UK

- results communicated to agricultural advisory service with technical graphs and charts, in English

- we wrote factsheets (English) as if intended for people with very similar backgrounds to researchers - no test of how useful these were
Figure 2. ‘communication as dissemination’ (research to farmer - coloured boxes) in the innovation process.

Researchers to advisor (public extension) links weak
Advisor-farmer links weak
Advisor - other sources of information weak

Farmers strongly connected in local systems of knowledge generation and sharing

Modified from “Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA): Developing a SCARDA Communications Strategy. 2007”
Habits hanging on?

- Nyambo and Ligate note, more than 10 years after I worked at the same research institute, that “The print media (posters and leaflets) were the least popular, mentioned by 10% of respondents in four villages, despite the fact that they are the most popular means of communication employed by Naliendele Agricultural Research Institute.”

- They note further that there is no pretesting of print materials.

- Other farmers, radio, agricultural advisors, and mobile phones were rated as more popular information sources.

Experiences from three settings

- UK - agricultural advisory service 1980s
- Tanzania - cashew research 1990s
- Tanzania & Malawi - aflatoxin awareness in groundnuts 2011-14
Tanzania & Malawi - aflatoxin in groundnuts

- more recent case 2011-14: participatory research now widely accepted
- collaboration with farm organisations and farmers in pilot initiatives far more common
- communication - ‘old habits’ - academic style printed information - which assumes ‘recipients’ share same understanding - still in use? (see next slide)
- considerable comprehension difficulties associated with this style of communication in print or spoken, including untested translations to Swahili - as a result I had an opportunity to participate in the Aflatoxin Awareness Raising work, with a focus on improving communication
These are excellent informative texts about the problem of toxins (mycotoxins) caused by fungi/mould growing in grains - for those familiar with the concepts and language. But without pretesting, the academic style raises the question of whether we can be certain that officials in towns and villages will understand the important information presented.
1. One-way dissemination or transfer; researcher makes major decisions in framing of message. This seems often to be the default practice or habit.

2. Participation can improve rapport and understanding.

Consultations with information clients - co-create messages, learn about best media types and channels.

Local voices, contexts and concerns - improve acceptance and legitimacy of messages.

Intermediary - plays translation role.

Reveal the process behind the messages? E.g. reveal microscopic phenomena? - may be key to understanding why some behaviours should be avoided and others practiced.
Examples of participatory communication - Aflatoxin awareness work, Tanzania 2012-14

- **pre-testing** of written information materials - this was a new step at the Tanzanian research institute, Mtwara
- raised understanding of test audiences of key points of the mould-aflatoxin relationship and why recommended control practices work
- Users appreciated language, story flow and relevance, illustrations
Animating invisible and the complex phenomena

- Alfatoxin awareness - Tanzania
- aflatoxin (the poison) - colourless and odourless - ingestion reduces immune defence, cause liver cancer
- common mould (Aspergillus species) produces aflatoxin
- this mould spreads ‘invisibly’ from soil and as spores in air
- and can infect groundnut at all stages from field to store
- by the time you see mould, aflatoxin is already present
- control requires preventive measures (e.g. good drying and storage under dry conditions) before mould is seen
- A computer animation was made of key aspects of the mould-aflatoxin lifecycle and how these relate to recommended control methods.

- Test audiences (farmers, traders, trainers - see picture) grasped the role of the mould fungus, its relation to aflatoxin, the value of recommended control measures.

- They expressed clear change in understanding compared to previous efforts to inform them about the issue by talking only.

See a clip of a key portion of the animation here - password SVAMPE. The version used in Tanzania was embedded in normal video and narrated fully.

Aflatoxin, though invisible, when it is produced by growth of the mould in groundnuts, is made to look like a yellowish stain spreading inside the nut for descriptive purposes.

**Spread and Infection by mould**

Animation: Picture of groundnut in the field courtesy Swathi Sridharan ICRISAT; photography and animation Martin Tørnby; direction N Q Nathaniels.
In summary

- Communication - happens after research
- Seen as sending validated information to a recipient
- Participation now used in the research, but far less use in formulating information materials?
- Improvements accrue through involving information users in creating messages and media (via consultations, pretests, panels etc) improves interest & comprehension
- And through making the invisible visible - useful for difficult topics that cannot be directly observed - video, computer animations - underexploited approach

- Still the assumption is that information from research brings about change
- Is this linear idea sufficiently useful in every case?
Useful ‘new’ concepts, gaining ground?

Paying more attention to innovation?

Paying more attention other facets of learning and communication?
1. Expanded research 4D framing

(Agricultural) innovation “not a process of invention driven by research, but a process of making novel use of ideas (old and new) with the specific intention of adding social, economic and environmental value”

“multiple entry points – e.g. research, education, business, infrastructure, institutional arrangements and the policy environment”. “Innovation seems to emerge from a network involving formal and informal alliances.

Hall (2012) Partnerships in agricultural innovation. Who puts them together and are they enough?
2. Expanded research communication framing?

- More focus on knowledge sharing, co-production of knowledge, on social learning, the roles of intermediaries and networks

Social Learning

Learning not only at individual level, but taking place within communities, institutions, organisations.

Social learning can be usefully categorised as:
- cognitive learning (factual knowledge)
- normative (changes in norms: values and belief systems)
- relational learning (building of trust, appreciation of others’ worldviews, etc.)

All can lead to outcomes e.g. changes to practice, values, institutions, or systems.

Other actors and roles are emerging -

- knowledge translators/ brokers (terms interchangeable depending on source of the experience)
- not new - agricultural development advisors in UK 1980s?
- enabling effective use of a broad range of information and knowledge for decision-making and change.
- attention to strengthening linkages and flows of information between disciplines, areas of practices, and sources of knowledge.

Old and new roles and functions

Business as usual? Old habits

Informational
Linear dissemination knowledge from producer to user

Relational
Participation, with user consultations, user testing, helps?

Knowledge intermediary/knowledge translator
Helping people make sense of and apply information

Innovation broker
Improving knowledge use in decision-making; fostering the co-production of knowledge

Source: Adapted from Fisher (2011).
DFID’s Research into Use Programme (RIU) - efforts at innovation brokering 2006-12

- aim - to extract long-term impact in Asia and Africa from DFID’s underused agricultural research results, and to derive lessons on the process of putting research into use.

- RIU programme was caught between two conceptually opposing perspectives.

1) conventional view - use of research ideas is something that happens after the research - linear concept of transfer of information and knowledge

2) Innovation Systems perspectives as the basis for research 4D design -

Innovation seems to emerge from networks involving formal and informal alliances

Innovation Platform mechanisms can foster such networks for change.

So what is an Innovation Platform?
Innovation Platform

- forum (formal/informal) where a group of actors agree to come together
- stakeholders have (individual) interests in an issue, challenge or opportunity to improve livelihoods, enterprises and/or other interests.
- stakeholders cooperate, communicate and share tasks to carry out activities needed for innovation to take place.
- active facilitation underpins an innovation platform, because stakeholders who might benefit from cooperation may not do so due to a variety of factors (e.g. institutional habits, social distance, policy effects, communication failures etc.)

Hall (2012) Partnerships in agricultural innovation. Who puts them together and are they enough?
Old and new roles and functions

Innovation platform - mechanism to place more emphasis on relational and system functions, while including other functions and roles, including experimentation and technical research.
Lessons from evaluation DFID RIU

Important cases from the DFID-sponsored RIU in Africa, studied by Gildemacher and Mur, who conclude that:

“..a direct linear relation between agricultural research results and agricultural development can easily lead to an unnecessary limitation of options ....for innovation.”

By contrast, “The interaction of different, converging opinions and experiences of stakeholders can result in new ideas that would not have developed autonomously.”

“Facilitation of such interaction should be a factor in all three components of the agricultural innovation process.”

Gildemacher and Mur. (2012). Bringing new ideas into practice; experiments with agricultural innovation. Learning from Research Into Use in Africa. KIT, Amsterdam
Implications?

- More attention to what we say, how we say it?
- Reconsider role of research, role of other players?
- Embrace initiatives where stakeholders associate, form new/strengthened collaborations/relations for building self-confidence and acquiring skills and support to act to tackle problems
- Acquire or collaborate with those with the facilitation and communication skills needed
- Funding challenges/project formulation/M&E?

For a detailed and useful review see Boogaard et al. 2013

Boogaard et al. (2013). Critical issues for reflection when designing and implementing Research for Development in Innovation platforms. KIT.
KT template - guide for development of Knowledge Translation (KT) plans for research (or non-research) projects

- Starts users in developing a theory of change around communication
- Builds practical plans for more inclusive and participatory communication
- Take a look at it (find on WWW), consider trying it out (if need be modified to suit your field) when drafting R4D project work.

NOTE: Knowledge Translation - often used interchangeably with knowledge broker

Melanie Barwick (2006, 2013) Hospital for Sick Children
Knowledge Translation Planning Template

INSTRUCTIONS: This template was designed to assist with the development of Knowledge Translation (KT) plans for research but can be used to plan for non-research projects. The Knowledge Translation Planning Template is universally applicable to areas beyond health. Begin with box #1 and work through to box #13 to address the essential components of the KT planning process.

<table>
<thead>
<tr>
<th>(1) Project Partners</th>
<th>(2) Degree of Partner Engagement</th>
<th>(3) Partner(s) Roles</th>
<th>(4) KT Expertise on Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ researchers</td>
<td>□ from idea formulation straight through</td>
<td>(1) What do the partner(s) bring to the project?</td>
<td></td>
</tr>
<tr>
<td>□ consumers - patients/families</td>
<td>□ after idea formulation &amp; straight through</td>
<td>(2) How will partner(s) assist with developing, implementing or evaluating the KT plan?</td>
<td></td>
</tr>
<tr>
<td>□ the public</td>
<td>□ at point of dissemination &amp; project end</td>
<td>Action: Capture their specific roles in letters of support to funders, if requested.</td>
<td></td>
</tr>
<tr>
<td>□ decision makers</td>
<td>□ beyond the project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ private sector/industry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ research funding body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ volunteer health sector/NGO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ practitioners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

- □ scientist(s) with KT expertise
- □ consultant with KT expertise
- □ knowledge broker/specialist
- □ KT supports within the organization(s)
- □ KT supports within partner organization(s)
- □ KT supports hired for specific task(s)

© 2008, 2013 The Hospital for Sick Children
(5) Knowledge Users (KUs)
Which KUs or audiences will you target?
- researchers
- health practitioners or service providers
- public
- media
- patients/consumers
- decision makers
  - in organization
  - in community
- policy makers
- private sector/industry
- research funders
- venture capitalists
- volunteer health sector/NGO
- other: specify

Consider: Have you included any of your audiences on your research team? If so, who and why (be strategic)?

(6) Main Messages
What did you learn, or what do you anticipate learning?

What messages do you anticipate sharing (up to 3 KU audiences can be included on this form)?
- Audience 1
- Audience 2
- Audience 3

OR
- No idea yet; messages will emerge during research through collaboration with partners.

Consider: What can you feasibly do within this project, given time and resources? Aim for defining your Single Most Important Thing (SMIT) or Bottom Line Actionable Message (BLAM).

(7) KT Goals
What are your KT Goals for each KU/audience?

Consider: KT is applicable to all research; even single studies are shared via journal articles. However, intent to change practice, behaviour or policy must be supported by a body of high quality research evidence (synthesis). Always consider legal and ethical principles in your KT efforts.

(8) KT Strategy(s)
What KT strategy(s) will you use?
- Mostly Effective
  - interactive small group
  - educational outreach
  - reminders
  - IT decision support
  - multi-prof collaboration
  - mass media campaign
  - financial incentive
  - combined interventions
- Mixed Effects
  - conferences (didactic)
  - opinion leaders
  - champions
  - educational materials
  - patient-mediated interview
  - performance feedback
  - substitution of tasks
  - peer reviewed publication
- Limited Effects
  - CQI - Continuous Quality Improvement
- Effects Unsupported by Synthesis
  - press release
  - patent license
  - arts-based KT
  - social media
  - networks
  - communities of practice
  - Café Scientifique
  - webinar
  - other

Consider: Multifaceted/combined KT strategies are more effective than single strategies.
When will KT occur?

- integrated iKT—researchers and research users will collaborate to shape the research process, e.g., setting the methodology, involvement in data collection and tools development, interpretation of findings and dissemination of research results
- end of grant KT—KT undertaken at the completion of the research process
- both

Comment on the specifics of your KT procedures; describe how you are using iKT:

(a) Where do you want to have an impact?
- healthcare/well-being outcomes
- (clinical) practice
- policies/systems
- research & knowledge

(b) How will you know if you achieved your KT goal(s)? Consider:
- reach indicators (distributed, requested, downloads/hits, media exposure)
- usefulness indicators (read/browsed, satisfied with, usefulness of, gained knowledge, changed views)
- use indicators (# intend to use, # adapting the information, # using to inform policy/advocacy/enhance programs, training, education, or research, # using to improve practice or performance)
- partnership/collaboration indicators (# products/services developed or disseminated with partners, # or type capacity building efforts, social network growth, influences, collaborativeness)
- practice change indicators (intent or commitment to change, observed change, reported change)
- program or service indicators (outcome data, documentation, feedback, process measures)
- policy indicators (documentation, feedback, process measures)
- knowledge change (quantitative & qualitative measures)
- attitude change (quantitative & qualitative measures)
- systems change (quantitative & qualitative measures)

(c) Guiding Questions for Evaluation

1. What internal/external factors do you need to consider? Where is the energy for this work? How have similar initiatives been evaluated in the past? (link this to partners, KUs)
2. Who values the evaluation of this initiative? What are they saying they need from this evaluation? (link this to partners, KUs)
3. Why are you evaluating? For program growth or improvement; accountability? Sustainability? Knowledge generation? (e.g., to know if the KT strategy met the objectives)
4. How will literature or existing theories inform how you evaluate the initiative?
5. Which questions/objectives are critical? (link this to KT goals, process, impact)
6. Will you focus on process or outcome information? What are your pre-determined outcomes? How will you capture emergent outcomes? Does this information already exist in your system? (link to methods, process, impact)
7. Will methods be quantitative, qualitative or mixed? Do tools exist or will you need to create your own? (link to KT methods)
8. What perspective or skill set do you need to help you reach your evaluation objectives? (link to partners, KUs)
9. How do your stakeholders wish to receive this information so that it will be valuable and useful to them? How will you engage them throughout? (link to partners, KUs)
<table>
<thead>
<tr>
<th>(11) Resources</th>
<th>(12) Budget Items</th>
<th>(13) Implementation</th>
</tr>
</thead>
</table>
| **What resources are required?**  
- board  
- financial  
- human  
- IT  
- leadership  
- management  
- volunteer  
- web  
- worker  
- other: (list) | **What budget items are related to the KT plan?**  
- accommodation  
- art installation  
- evaluation specialist  
- graphics/imagery  
- knowledge broker  
- KT specialist  
- mailing  
- media release  
- media product (e.g. video)  
- networking functions  
- open access journal  
- plain text writer  
- estimated costs for items listed  | **Describe how you will implement your KT strategy(s):**  
- What processes/procedures are involved? If practice or behaviour change is the focus, how will you ensure the knowledge (intervention) you are transferring retains quality, fidelity, sustainability?  
- |
Thank you