Toolbox tailors extension to the needs of poor households and communities

RIU

Validated RNRRS Output.

New thinking—emphasizing pluralism, inclusion, farmer empowerment and demand-driven services—has changed the way extension service providers view poverty and production goals. The diversity response approach (DRA) is helping them to put these new approaches into action, and helping them understand the diverse demands and priorities of rural communities and households. DRA applies participatory and technical tools to match available technologies to the needs of identifiable groups, including vulnerable groups that are frequently overlooked. This toolbox, which grew out of efforts to improve grain-store pest management, is helping to counter food insecurity and bolster the livelihoods of smallholder farmers in northern Ghana and Tanzania.

Project Ref: **CPH25:**
Topic: **5. Rural Development Boosters: Improved Marketing, Processing & Storage**
Lead Organisation: **Natural Resources Institute (NRI), UK**
Source: **Crop Post Harvest Programme**

Document Contents:

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

Ghana, Tanzania, Zimbabwe,

Target Audiences for this content:

Crop farmers,

Description

CPH25

A. Description of the research output(s)

1. Working title of output or cluster of outputs.
In addition, you are free to suggest a shorter more imaginative working title/acronym of 20 words or less.

Diversity Response Approach: Sensitising service providers to farmer diversity as exemplified by approaches to better crop storage.

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

Crop Post-harvest Programme

3. Provide relevant R numbers (and/or programme development/dissemination reference numbers covering supporting research) along with the institutional partners (with individual contact persons (if appropriate)) involved in the project activities. As with the question above, this is primarily to allow for the legacy of the RNRRS to be acknowledged during the RIUP activities.

R8265 (2002 – 2005) Improving household food security by widening the access of small-holder farmers to appropriate grain store pest management.

Collaborating agencies:

Natural Resources Institute, University of Greenwich, Central Avenue, Chatham Maritime, Kent, ME4 4TB, UK

Contact Person: Dr Rick Hodges and Mike Morris
Email: r.j.hodges@gre.ac.uk Tel: +44 (0) 1634 883813

Ministry of Food and Agriculture, Tamale, Ghana

Contact Person: Mr Fusieni Andan
Email: princefuhaan@yahoo.co.uk Tel: +233 208164891

Other key collaborators include:

Mr. Osman Abdel-Rahman, Ghanaian Danish Development Agency.
Email gdca@africaonline.com.gh

Mr Zacharia Abdul-Rashid, Northern Ghana Network for Development.

Dr Samuel Addo, Independent Consultant
Email: ssbaddo@yahoo.com

Mr Sulemana Stevenson, Director, Community Action Programme for Sustainable and Rural Development (CAPSARD), Tamale.

Mr Solomon K Bariyam, Supervisor, Opportunities Industrialisation Centres, Tamale (OICT).

Mr Naresh Shukla, Centre for Agricultural and Rural Development (CARD), Tamale.

Dr Joyce A Bediako, Head of Department, University for Development Studies (UDS), Nyankpala.

Ministry of Agriculture and Cooperatives, Tanzania (who are undertaking parallel work)

Contact Person: Mr William Riwa, Plant Health Services Division

E-mail: wilriwa052@yahoo.com

4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? ***(max. 400 words)****. This requires a clear and concise description of the output(s) and the problem the output(s) aimed to address. Please incorporate and highlight (in bold) key words that would/could be used to select your output when held in a database.*

New thinking on extension approaches, which emphasises **pluralism**, **inclusion**, **farmer empowerment** and **demand-led** services, is now widely promoted as being key to the provision of extension services that will address both poverty and production goals. Difficulties remain however in operationalising these approaches. The **diversity response approach (DRA)** enables extension service providers to advance their understanding of the complexity and diversity of rural communities and households, and to facilitate responsiveness to the correspondingly diverse needs and priorities of these constituencies. The DRA approach brings together sets of participatory and technical tools – a **responsiveness toolbox (RTB)** – to improve and make more effective the match of technologies to the needs of identifiable groups within communities, including those vulnerable groups who are frequently overlooked. Recognition of the plight of diverse poor groups should both help amplify the voices of the poor and ensure services better tailored to their needs and circumstances.

Recognition of the need for and development of the DRA took place in the context of research initiatives specifically focussed on technologies that would increase farmers' abilities to protect their grain stocks against post-harvest pests. To many African small-holders, food and financial security are often represented by **stored grain** and other commodities. These are subject to attack by a complex of insect pests, including the larger grain borer (LGB), an especially damaging species from Central America now endemic in many parts of SSA. Improving **grain-store pest management** has thus been seen as a means to counter **food insecurity** and bolster the livelihoods of smallholder farmers. Earlier research initiatives however focused on developing technical solutions to specific pest/crop-related problems, and paid less attention to distinguishing between the needs and priorities of different farmers, or to understanding **service delivery system constraints**. Either or both of which could – and do – undermine the developmental impact of good science.

The specific focus of the initial research (1996 - 1999; 1999 - 2002) was driven by tackling the dire LGB situation, and included development of an **LGB risk warning system**, linked to **targeted insecticide application** (i.e. reducing the amount of pesticide applied per storage container), in recognition that pesticides are expensive and cost would inevitably deter many smallholder farmers from purchasing them. Other specific technology sets included **mud silo storage, cowpea solarisation, use of diatomaceous earth**, which are dealt with in detail in other dossiers.

5. What is the type of output(s) being described here?
Please tick one or more of the following options.

Product	***Technology***	***Service***	***Process or Methodology***	***Policy***	***Other Please specify***
	X		**X**		Service approach

6. What is the main commodity (ies) upon which the output(s) focussed? Could this output be applied to other commodities, if so, please comment

The DRA is not commodity dependent, but applicable to all circumstances (i.e. all rural livelihoods)

7. What production system(s) does/could the output(s) focus upon?
Please tick one or more of the following options. Leave blank if not applicable

Semi-Arid	***High potential***	***Hillsides***	***Forest-Agriculture***	***Peri-urban***	***Land water***	***Tropical moist forest***	***Cross-cutting***
X	**X**	**X**	**X**	**X**	**X**	**X**	*

* The DRA is applicable to all production systems

8. What farming system(s) does the output(s) focus upon?
Please tick one or more of the following options (see Annex B for definitions).

Smallholder rainfed humid	***Irrigated***	***Wetland rice based***	***Smallholder rainfed highland***	***Smallholder rainfed dry/cold***	***Dualistic***	***Coastal artisanal fishing***
X	**X**	**X**	**X**	**X**	**X**	**X**

* The DRA is applicable to all farming systems

9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)? (max. 300 words).

Please specify what other outputs your output(s) could be clustered. At this point you should make reference to the circulated list of RNRRS outputs for which proformas are currently being prepared.

The diversity response approach is for use with and by extension service providers to advance their understanding of the complexity and diversity of rural communities and households, and to facilitate responsiveness to the correspondingly diverse needs and priorities of these constituencies. The DRA approach brings together sets of participatory and technical tools – a responsiveness toolbox (RTB) – to improve and make more efficient the match of technologies to people's circumstances. This is directly relevant to the promotion and extension of a wide range of technologies to farming households where options are required to ensure appropriate matches with the different means and needs of diverse households.

In the field of grain storage, a range of improved technologies exist with which this output might usefully be clustered. These include risk warning and targeted pesticide treatments for LGB (R6684, R7486), improved design of indigenous grain stores (R6685, R6502, R6684), the substitution of synthetic pesticides by solarisation for cowpea (R7442), and diatomaceous earths for maize and sorghum (R8179). The approach could usefully be melded with the 'enquiry tool' developed in R8179, which was further developed under R8460, Post-harvest-innovation: Enhancing performance at the interface of supply and utilisation. This latter project introduced post-

harvest learning alliances (PHILA), which too would allow for value to be added to this methodology.

Validation

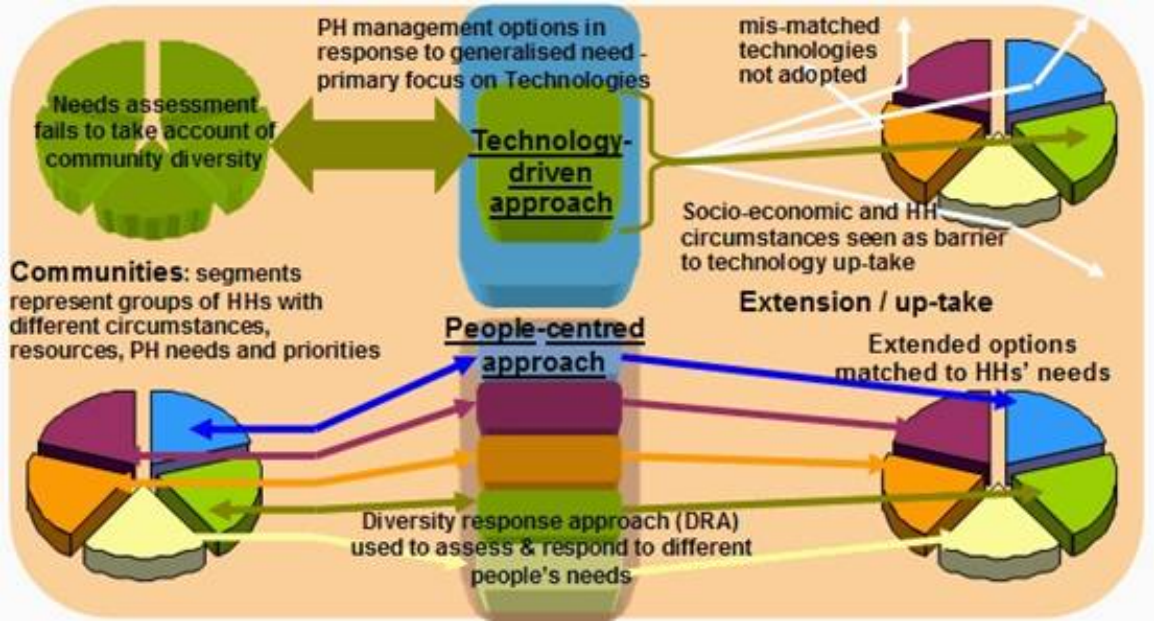
B. Validation of the research output(s)

*10. **How** were the output(s) validated and **who** validated them?*

*Please provide brief description of method(s) used and consider application, replication, adaptation and/or adoption in the context of any partner organisation and user groups involved. In addressing the "who" component detail which group(s) did the validation e.g. end users, intermediary organisation, government department, aid organisation, private company etc. This section should also be used to detail, if applicable, to which social group, gender, income category the validation was applied and any increases in productivity observed during validation **(max. 500 words)**.*

The original aim of the project (R8265) was to promote a range of grain protection options and hygiene measures to improve household food security. These would be based predominantly on technologies developed by previous CPHP projects, which were to be matched to the circumstances of individual households using a decision-support tool that the project would develop.

Many of the existing PH technologies however, most of which had been developed following needs assessment exercises, were found not to fit with or meet the priorities of poorer households. Moreover their extension by the Ministry of Food and Agriculture (MoFA) and voluntary sector agencies had usually involved the use of 'contact' or progressive farmers – often the same types of farmers contacted during the earlier needs assessment exercises – whose resource bases, needs and priorities are typically significantly different from those of poorer households. Discovery that the existing portfolio of storage technologies were mostly inappropriate for many poorer households, that extension services were failing to take account of their particular circumstances, and cognisance of the focus of MoFA's new agricultural extension policy which is "to ensure equity in the distribution of benefits from development; to improve rural livelihoods; and to reduce poverty" (MoFA, 2002), prompted a rethink by the research coalition which led to the development of the DRA.



Validation of the DRA was undertaken through a series of participatory office- and village-based workshop activities. Participants included key representatives from the coalition of implementing agencies (MoFA, OICT, CAPSARD, CARD, UDS, NRI), district directors, local field staff, and farmers' representatives. Village-based activities involved the same participants, plus cross-sections of the village community by wealth, age, gender etc.

The *Review Workshop*, held at MoFA, Tamale, 17–18 March, 2004, reinforced and framed the need for the DRA, and explored institutional constraints to technology promotion.

The *Responding to Diversity Workshop* was held both at MoFA and at Tampe-Kukuo village, Tamale, 21-26 June, 2004. This workshop confirmed the need for 'responsiveness' amongst agricultural service providers, explored the dimensions of diversity, identified practical means and tools for taking diversity into account, and at village level tested different approaches to 'wealth' ranking to explore social differentiation.

The *Diversity Response Approach: Development and Training Workshop*, held at Dalun village, Tamale, 13-17 October, 2004, was facilitated by the Ghana Danish Community Association, and was the culminating exercise in the validation of the DRA methodology, its component steps and tools. The workshop was woven around a series of demonstrations (role-plays) for and by the end-users, use of participatory tools with community members, followed by further reflection and learning by the end-users. End-users here refer to the service providers (i.e. the intended users of the DRA output).

A similar approach to explore post-harvest differentiation, referred to as the *enquiry approach* – listening and learning from farmers – was developed in Tanzania and Zimbabwe (see R8179 and R8460). Validation involved extension staff in repeat visits, three per year for up to three years, to households from different wealth groups, in villages in three different districts.

11. ***Where and when*** *have the output(s) been validated?*

Please indicate the places(s) and country(ies), any particular social group targeted and also indicate in which production system and farming system, using the options provided in questions 7 and 8 respectively, above ***(max 300 words)****.*

The DRA methodology was validated in Northern Region, Ghana, throughout 2004. The approach, which is relevant to all service providers – state, private or voluntary – and can be applied to any production or farming system, specifically enables responsiveness to different social groups, including the poor and marginalized (i.e. facilitates targeting). Field validation took place in two villages, near Tamale, where people are predominantly engaged in crop farming (men: rice, maize, groundnuts, cowpea, cassava, etc.; women: rice, okra, pepper, etc.), but supplement their livelihoods with a range of other activities (e.g. petty trading, processing of shea nuts, livestock and poultry production, vehicle hire, on- and off-farm labour, handicrafts, etc.), depending on social characteristics such as wealth, age or gender.

Validation of the *enquiry approach*, also developed in the context of grain storage protection, took place in villages in three different districts, two in Tanzania and one in Zimbabwe, during the period 2003-2005. All districts, while representing different agro-ecological zones, are designated semi-arid areas, with households predominantly engaged in crop farming, and growing maize in particular. The majority of participating households selected to represent the wider community, came from the poorer and middle sections of their respective communities, as identified through wealth ranking by key local informants.

The rationale for both the DRA and the *enquiry approach* – people-centred approaches – is expressly to enable service providers to hear and learn from different groups, and particularly vulnerable groups who are typically overlooked by the technology-driven approaches hitherto favoured by state extension services.

Current Situation

C. Current situation

12. ***How and by whom*** *are the outputs currently being used? Please give a brief description* ***(max. 250 words****).*

The DRA approach brings together sets of participatory and technical tools to enable targeted interventions, and improve the match between household needs and priorities, and available technologies. These steps and tools were drawn (and developed) from the experiences of the various organisations making up the coalition. As such component tools of the DRA are being used, shared and refined by many of the agencies and projects active in Northern Region, Ghana. Despite the efforts of the development team, the DRA methodology itself has not been formally adopted or institutionalised by MoFA (i.e. in the sense of being mainlined across its extension services).

The parallel work in Tanzania is being promoted by Plant Health Services (PHS) and Post-Harvest Management Services (PHMS) in the Ministry of Agriculture, Food and Cooperatives (MAFC), whose staff were instrumental in the development of the *enquiry approach* methodology. PHS was more closely associated with crop production goals and PHMS with food security goals, a situation that with the recent change in designation [1] of the ministry may be changing. Both PHS and PHMS are members and make use of the *post-harvest innovation learning*

alliance (PHILA), a national learning network, set up to better facilitate the out- and up-scaling of relevant post-harvest technologies (R8460).

[1] Ministry of Agriculture, Food and Cooperatives (MAFC), formerly Ministry of Agriculture and Food Security (MAFS), Tanzania.

*13. **Where** are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used **(max. 250 words).***

There is incremental and discrete use of the component DRA tools for extension purposes throughout the northern region of Ghana, but not of the DRA, the main output, as a whole.

In Tanzania, PHS have adopted a diversity approach, and are currently deploying an *enquiry* tool in Dodoma, Manyara and Singida regions. PHMS staff, who are also involved in this initiative, are undertaking further research into its applicability.

*14. What is the scale of current use? Indicating how quickly use was established and whether usage is still spreading **(max 250 words).***

In northern Ghana, despite nominal acceptance by the authorities (i.e. RADU - NR) of its relevance to the implementation of the most recent agricultural extension policy, the DRA has not been formally adopted; and a funding proposal for its out-scaling to two adjacent regions was unsuccessful. RADU say that lack of funds prohibited them from using the methodology beyond the project phase.

Parallel efforts in Tanzania, which had wider participation and buy-in from more influential players in the ministry – and the associated creation of the post-harvest innovation learning alliance (PHILA; see http://www.nri.org/PHILA/) – have ensured persisting interest in the approach and its on-going use in focus districts.

While the new thinking on extension approaches, which emphasises pluralism, inclusion and farmer empowerment, and demand-led services, is now widely manifest in agricultural extension policies and implementation strategies, and the DRA and similar methodologies offer the means to advance implementation, adoption and spread require that key personnel have requisite understanding, resources and motivation.

*15. In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the promotion and/or adoption of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success? **(max 350 words).***

In Ghana the DRA has not been formally adopted and received only limited promotional support from existing institutional components. This might suggest either that the output was not appropriate, or that the existing institutional setting was not supportive. We would argue that neither interpretation is accurate, nor do justice to the setting or output.

MoFA recognises the need for national extension services to:

- be pluralistic, demand driven and client focused;
- promote accountability in the public sector and be responsive to changing needs;
- encourage private sector participation;
- be consistent with other government policies, including decentralisation to district assemblies.

MoFA has acknowledged that these aims “call for a new way of visualising, planning and implementing delivery of agricultural extension services” (MoFA, 2002). The DRA was accordingly developed to assist MoFA and other key stakeholders in northern region with the delivery of improved agricultural extension services [1].

The project was coordinated by the post harvest unit (PHU) in the regional agricultural development unit (RADU), MoFA(NR), Tamale, but working with and through a coalition of local NGOs, and latterly the newly created district directors of agriculture (DDAs) in the district agricultural development units (DADUs). A project review [2] revealed that some DDAs were concerned by the way in which coalition NGOs were operating in their districts (i. e. without consulting them), and by the controlling role of the centrally-based PHU. Other concerns related to the PHU running the project as a parallel internal structure within RADU, and failing to adequately engage with the DADUs other RADU resource people. The coalition introduced measures to counter these tendencies, including recommendations that the regional director of agriculture (RDA) should take over coordination of the project. CPHP funds for the following year, the period during which these measures were expected to come into effect, were not however awarded, which terminated both project and the institutional learning.

Success of the parallel initiative in Tanzania, was helped by the decentralisation process there being more advanced, but more importantly by having an influential ‘champion’ at ministry level, who was able to promote the project and garner support.

[1] See MORRIS, M., ANDAN, F.H., ADDO, S., and HODGES, R. (2004), Responding to Diversity: A report on the deliberations of coalition members - MoFA, OICT, CAPSARD, CARD, UDS & NRI (UK) - and associated field staff, during an extended workshop held between 21 - 26 June, 2004, at MoFA and Tampe-Kukuo village, Tamale, Northern Region. Ministry of Food and Agriculture, Tamale, Ghana. 31pp.
[2] MORRIS, M., ANDAN, F.H., ADDO, S., BEDIAKO, J., BARIYAM, S. and HODGES, R. (2004), Review Workshop: Proceedings of a workshop organised by MoFA in coalition with OICT, CAPSARD, CARD, UDS and NRI (UK) and held on March 17th and 18th, 2004, at MoFA, Tamale, Northern Region. Ministry of Food and Agriculture, Tamale, Ghana. 37 pp.

Environmental Impact

H. Environmental impact

24. What are the direct and indirect environmental benefits related to the output(s) and their outcome(s)? ***(max 300 words)***
This could include direct benefits from the application of the technology or policy action with local governments or multinational agencies to create environmentally sound policies or programmes. Any supporting and appropriate evidence can be provided in the form of an annex.

Improving service providers’ understanding of farmers’ (post harvest) circumstances and demands is the starting point for prompter, more effective and efficient services; and will lead to direct beneficial environmental impact. The bio-physical environment is key to farmers’ livelihoods, and concerns arising from the natural resource base (e.g. levels of pest infestation, stored seeds and foods, materials for store construction, fuel wood availability, access to good water) should be identified sooner and met with more appropriate and sustainable solutions (e.g. use of safe storage insecticides, correct dosage or concentration applied).

The approach ensures that the differing bio-physical arenas (e.g. agro-ecological zones, high/medium/low potential areas, climate and climate variability, infrastructure, land planning) are taken into account. Poor and

erratic rainfall for example, not only effects levels and quality of production, but influences pest incidence, grain moisture content and mould incidence, and patterns of consumption.

25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)? ***(max 100 words)***

None

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience? ***(max 200 words)***

The DRA output recognises that poor people are more vulnerable to climate variability and extremes of climate (e. g. drought, floods), and to the direct consequences of these factors (e.g. bush fires). By recognising the specific tribulations effecting different groups of poor people, the approach should not only enable direct problems to be addressed but also open the door to longer-term solutions that will help build adaptive capacity, both of such groups and of service providers.

Annex

Acronyms and Abbreviations

CAPSARD	Community Action Programme for Sustainable and Rural Development
CARD	Centre for Agricultural and Rural Development
CIDA	Canadian International Development Agency
CPHP	Crop Post-Harvest Programme
DADU	District Agricultural Development Unit
DAES	Directorate of Agricultural Extension Services
DDA	District Director of Agriculture
DDO	District Development Officer
DFID	Department for International Development (UK)
DRA	Diversity response approach
FARMER project	Farmer-Responsive Mechanisms in Extension and Research project (CIDA funded)
GDCA	Ghana Denmark Community Association
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
HH	Household
LGB	Large grain borer, *Prostephanus truncates*
MAFC	Ministry of Agriculture, Food and Cooperatives (Tanzania)
MAFS	Ministry of Agriculture and Food Security (Tanzania)
MoFA	Ministry of Food and Agriculture (Ghana)
NGND	Northern Ghana Network for Development

NGO	Non-governmental organisation
NR	Northern Region
NRI	Natural Resources Institute
OICT	Opportunities Industrialisation Centres, Tamale
PH	Post harvest
PHILA	Post Harvest Innovation Learning Alliance
PHMS	Plant Health Management Services (Tanzania)
PHS	Plant Health Services (Tanzania)
PHU	Post Harvest Unit (MoFA)
PRSP	Poverty Reduction Strategy Paper
RADU	Regional Agricultural Development Unit
RDA	Regional Director of Agriculture
RTB	Responsiveness Tool Box
SMS	Subject Matter Specialist
UER	Upper Eastern Region
UDS	University for Development Studies, Nyankpala
WIAD	Women in Agricultural Development