

# What Works in Rural Advisory Services?

Global Good Practice Notes



### **Global Good Practices Initiative**

The Global Good Practices Initiative aims to facilitate access to information and know-how on agricultural and rural advisory services for a wide audience of practitioners. It does so by preparing Global Good Practice (GGP) Notes, which are descriptions of key concepts, approaches, and methods in an easy-to-understand format. They give an overview of the main aspects of a practice or approach, best-fit considerations, and sources for further reading. The GGP Notes collated in this book, originally published individually between 2014 and 2017, are openly available as stand-alone publications at <http://www.betterextension.org>.

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The Global Forum for Rural Advisory Services (GFRAS) is about enhancing the performance of agricultural extension and rural advisory services (RAS) so that they can better serve farm families and rural producers, thus contributing to improved livelihoods in rural areas and the sustainable reduction of hunger and poverty. Rural advisory services help to empower farmers and better integrate them in systems of agricultural innovation. GFRAS reaches smallholder farmers through its regional RAS networks, which in turn have national-level platforms or country fora. The country fora bring together stakeholders from all sectors working in RAS, and work directly with smallholders. Country fora help prioritise national-level issues relevant to extension and RAS, and formulate requests and proposals to be taken to the regional and global levels.

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First Edition published in 2018



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Correct citation: Davis, K., Bohn, A., Franzel, S., Blum, M., Rieckmann, U., Raj, S., Hussein, K. and Ernst, N. 2018. What Works in Rural Advisory Services? Global Good Practice Notes. Lausanne, Switzerland: GFRAS.

Published in Switzerland by GFRAS

ISBN 978-3-9523901-8-4

Editing, design, and layout: Green Ink, <http://www.greenink.co.uk>

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This publication has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI. Links to third party websites are provided by GFRAS in good faith and for information only. GFRAS disclaims any responsibility for the materials contained in any third party website referenced in this book.

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# Foreword

Rural advisory services (RAS) have the potential to play critical roles in improving the livelihoods and well-being of rural people worldwide, and to enable rural people to maximise their contributions to sustainable national, regional, and global development.

Given this potential, RAS are often tasked with a diversity of activities that go well beyond transferring to farmers new technologies that focus on improving production and agricultural productivity. Providers of RAS may now be required to play other roles: for example, to link farmers to local and international markets; to strengthen value chains and support farmers in entrepreneurial ventures; to provide advice on options for managing their farms; to propose actions that reduce the vulnerability of the rural poor, especially smallholders, women, and youth; to promote the inclusion of youth in agriculture; to promote nutrition and gender in households; to support farmers' bargaining position and help them organise themselves in groups and cooperatives; to ensure environmental conservation; to bridge the rural–urban divide and contribute to sustainable rural and urban transformation; to enhance and strengthen innovation processes by brokering and facilitating cooperation between different actors in the agricultural innovation system – and more. To fulfil these tasks, a wide range of approaches, methods, and principles exist, which all have their advantages and disadvantages, costs, challenges, and opportunities. The success or failure of these approaches is always closely linked to the context in which they are applied, so it is critical to strengthen the capacities of RAS providers to select and adapt approaches to a specific context and to the needs of the stakeholders involved in agriculture in that context.

Extensive documentation, knowledge, and information is available on these approaches and principles in a wide range of publications. Yet this information is often scattered and not easily accessed by RAS providers, whose time and resources are often limited. The Global Good Practices Initiative aims to bridge this gap and support RAS providers (organisations, managers, individual field staff) by providing balanced, easily accessible, and easy-to-understand overviews on key approaches, principles, and methods.

We hope that this compilation of the first 31 notes will help RAS providers take informed decisions and potentially improve the services they provide. We also hope that it will inspire readers to try out, adapt, and contextualise an approach or principle in their work that they have not considered so far. GFRAS provides a global platform for RAS stakeholders to share lessons from such experiences.

We encourage you to share your own experiences and learning – also questions and thoughts – directly with the authors and the Global Good Practices community on <http://www.betterextension.org>, and to contribute in this way to strengthening RAS as key facilitators for sustainable development.

Karim Hussein



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# Acknowledgements

The Global Good Practices (GGP) Initiative could not have come this far without the support of key partners. From in-kind contributions and participation in consultation processes to the sharing of valuable insights, the contributions have been manifold and instrumental to the Initiative's successful realisation.

A special thanks goes to all the authors, reviewers, and translators, the GGP Advisory Committee, and all the stakeholders known or unknown to GFRAS that have helped with the development, use, and dissemination of the GGP Notes.

Specifically, the GGP Initiative has been supported by the following organisations and institutions:

- Bill & Melinda Gates Foundation (BMGF)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Feed the Future: The US Government's Global Hunger and Food Security Initiative
- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Swiss Agency for Development and Cooperation (SDC)

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# Introduction

There is plenty of information available in the public domain that covers various aspects of rural advisory services (RAS; in many countries also referred to as extension). However, this information is often scattered, presented in complex academic language, and not readily accessible. RAS managers and practitioners, who often have very limited time and may have only basic formal education, find it difficult to make use of this information. Another weakness of the available literature is that much of it is written up as success stories, lacking balanced information about an extension method's weaknesses and under what circumstances it may or may not be effective.

The Global Good Practices (GGP) Initiative of the Global Forum for Rural Advisory Services (GFRAS) aims to bridge the existing knowledge gap regarding what works in RAS by looking at experiences of existing good practices and evidence at a global level to create a set of concise briefs – Global Good Practice Notes. These provide guidance to extension managers and practitioners on how to select and apply approaches in their specific situation. The notes also explain the different ways in which an approach has been used, and how it has been adapted to different contexts and countries. In addition to extension managers and practitioners, other audiences who will find the notes useful include staff and students in universities and other educational institutions, researchers, policy-makers, producer organisations and private companies buying produce from farmers, and development practitioners interested in promoting agricultural innovations.

With the support of many partners, and based on broad consultation processes, GFRAS has developed a common definition of good practices and a framework for their selection in RAS; established an Advisory Committee; and, working with and connecting actors from all around the world, has developed 31 GGP Notes to date. All content developed within the initiative is freely available at <http://www.betterextension.org> in English and French (with the exception of notes 27–30, which are currently only available in English). Based on demand, versions in other languages will be added over time.

This book offers the full collection of notes published up to August 2017. Following an overview of extension philosophies and methods, the notes are divided into four sections: Governance and structure; Capacity and management; Advisory methods; and Cross-cutting issues. This introduction outlines the conceptualisation and history

of the GGP Initiative, how it is managed, and the reasons behind the organisation and structure of the GGP Notes.

## Defining good practice

Many different types of RAS practices have been tried all over the world. Extension managers and policy-makers often wonder which RAS approach is best, and would like a 'recipe' for how to implement RAS that will meet their goals. However, experience shows that implementation of such formulaic, standardised, one-size-fits-all approaches is far from the reality; in order to ensure the effectiveness of its actions, RAS must move from a 'best practice' to a 'best-fit'<sup>1</sup> approach, where the methods, structures, and governance fit local sociocultural, ecological, economic, and political conditions. It is based on this rationale that we replace the phrase 'best practice' with 'good practice'.

Various researchers, experts, and organisations have asked themselves what makes a practice 'good' and offer different definitions. In relation to RAS and good extension practices, good practices have been defined as:

- approaches that contribute directly to the use of agricultural innovations to improve livelihoods and develop skills<sup>2</sup>
- a mechanism, method, process, or strategy that allows extension functions to be more effective and efficient, and contributes to the introduction of innovations to improve skills<sup>3</sup>
- extension and advisory practices that have successfully engaged men and women farmers and entrepreneurs with limited resources, which are successfully adapted to fit local conditions and the institutional context to establish productive and profitable relationships.<sup>4</sup>

GFRAS used these definitions and combined them with the concept of 'best fit' to define good practices used in RAS as techniques or approaches that fit local sociocultural, ecological, economic, and political conditions and that embrace pluralism (that is, the provision of advisory services by different types of organisations); increase accountability to rural clients; are inclusive (engage marginalised groups such as women, youth, and the poor); develop human resource capacity; and are sustainable. Good practices allow RAS programmes to be more effective and efficient, and to meet programme goals. The techniques or approaches may concern advisory methods, structures, or governance.

1 Birner, R., Davis, K., Pender, J., Nkonya, E., Anandajayasekaram, P., Ekboir, J., Mbabu, A., Spielman, D., Horna, D. and Benin, S. 2009. From best practice to best fit: a framework for analyzing agricultural advisory services worldwide. *Journal of Agricultural Extension and Education* 15(4): 341–355.

2 Swanson, B. 2008. *Global review of good agricultural extension and advisory service practices*. Rome: Food and Agriculture Organization of the United Nations.

3 Preissing, J. 2011. *Good practices in extension management for Central America*. Rome: Food and Agriculture Organization of the United Nations.

4 Modernizing Extension and Advisory Services, <http://www.meas-extension.org>

## How good RAS practices contribute to strengthening the agricultural sector

Good RAS design and implementation depends on key actors including decision-makers, extension managers, extension practitioners, educators, trainers, farmers, and end-users. These actors need reliable, evidence-based knowledge about RAS practices in order to shape policy; develop strategies and allocate resources; provide effective, adapted, and evidence-based services and support to farmers; and improve the capacity of various actors. These initiatives, practices, and actions contribute to the broader goals of improving livelihoods, food security, and resilience; reducing poverty and risks; and ensuring continued investment in RAS.

To enable the GGP Initiative to support these processes, GFRAS developed a framework to systematically examine existing or promising good approaches to extension and RAS, and their impact on agriculture and rural populations. Birner et al.'s (2009) framework for designing and analysing agricultural advisory services<sup>5</sup> defines the fundamental issues that affect RAS and agriculture:

- governance and structures (RAS provision, financing, coordination, partnerships)
- management and capacity strengthening (mandate and mission, incentives, training, continuing education, performance)
- advisory methods (approaches for learning, targeting, delivery, scaling, technologies used)
- cross-cutting issues (gender, youth, climate change, nutrition).

GFRAS systematically examines good extension approaches and potential topics for GGP Notes against this framework, ensuring the GGP Initiative adequately reflects the key issues affecting RAS and agriculture.

### Content of GGP Notes

Global Good Practice Notes are brief (around four pages), evidence-based, and practice-oriented, combining experiences beyond one country or organisation. The notes use accessible, non-academic language and have a standardised structure with the aim of providing implementers and decision-makers with a succinct overview of approaches and principles. While aiming to develop a basic understanding of an approach, each note provides references to more extensive resources and tools for further information.

Each note generally conforms to the following outline:

- Philosophy and principles
- Implementation
- Capacities required
- Costs
- Strengths and weaknesses
- Best-fit considerations
  - For which target groups
  - For which innovations
  - In which ecological and institutional settings
- Governance
- Evidence of impacts, sustainability, and scalability
- Further reading
- Training materials.

### Management

The GGP Initiative is managed and driven by four mechanisms: a coordinator based in the GFRAS Secretariat, an Advisory Committee, RAS experts and practitioners who author and review the notes, and partner and financing institutions.

The Advisory Committee was formed in 2013 and has since refined the framework for case selection and analysis based on a multi-stakeholder consultation; developed criteria for GGP Notes; selected proposals for notes; and evaluated and ensured the quality of notes during their development.

The authors and reviewers are RAS professionals from various organisations. Notes are often the result of collaboration between authors bringing their own experience and expertise on the topic from different perspectives and backgrounds.

The GFRAS Secretariat coordinates the efforts of different actors, manages the distribution of the notes and, with guidance from the Advisory Committee and key partners, oversees the implementation of the Initiative.

The GGP Initiative could not have come this far without the support of key partners. Beyond various in-kind contributions from organisations (participating in consultation processes and/or the Advisory Committee, authoring or reviewing notes, and supporting their translation and dissemination), the Initiative has received financial support from BMGF, PIM, GIZ, SDC, and the Feed the Future Initiative.

A full list of the organisations and institutions supporting the GGP Initiative can be found in the Acknowledgements and Author information sections.

<sup>5</sup> Birner et al., 2009. Op. cit.

# Overview of extension philosophies and methods

Kristin Davis and Rasheed Sulaiman V

## Introduction

Extension (also known as rural advisory services) has risen and fallen on the global development agenda. The focus on extension increased during the green revolution era. Today, due to factors such as food price crises and climate change, extension is increasingly recognised as critical for rural development. This note aims to introduce programme managers to extension philosophies and methods over the past decades. It demonstrates that each approach originated in specific circumstances, and has both merits and demerits.

There are many philosophies and methods for extension, and views on what it is all about have changed over time. Extension originally was conceived as a service to 'extend' research-based knowledge to the rural sector to improve farmers' lives. It includes components of technology transfer, rural development goals, and non-formal education. The traditional view of extension in developing countries was focused on increasing production, improving yields, training, and transferring technology. Today's understanding of extension goes beyond technology transfer to facilitation; beyond training to education; and includes assisting farmer groups to form, dealing with marketing issues, and partnering with a broad range of service providers.<sup>1</sup>

### Box 1. What is extension?

GFRAS defines extension as all the institutions from different sectors that facilitate farmers' access to knowledge, information, and technologies; their interaction with markets, research, and education; and the development of technical, organisational, and management skills and practices. Thus extension includes not only technical knowledge, but also functional elements such as communication, facilitation, and empowerment.

## Philosophy and principles

Depending on the underlying political, economic, and social philosophies and programme goals, there are varying philosophies and methods of advisory services.

The dominant paradigm in the 1970s and 1980s (which still exists today) was **transfer of technology**, a linear approach (Figure 1) that aims to persuade farmers to adopt new technologies, such as high-yielding varieties of rice and maize.

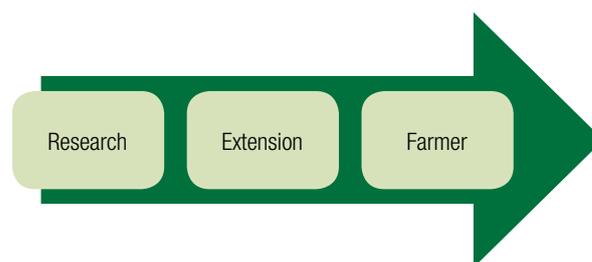


Figure 1. Linear approach

As practitioners saw that this approach was not necessarily meeting farmers' needs, more participatory approaches came about, where farmers articulate demand and are involved in research and extension activities.

The linear philosophy was replaced by systems approaches such as **farming systems research and extension**, which merges research and extension in multi-disciplinary teams. A spin-off of this was the **agricultural knowledge and information systems** approach (Figure 2), emphasising links between research, education, extension, and farmers.

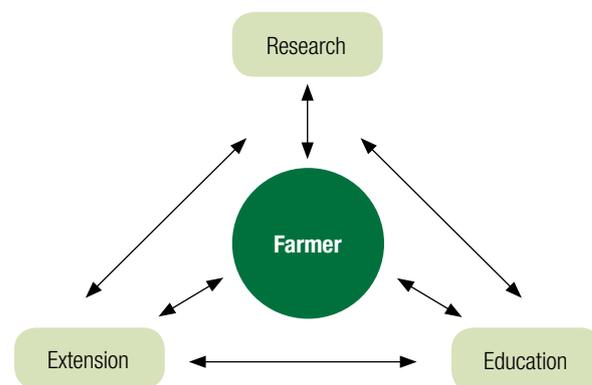


Figure 2. Agricultural knowledge and information systems approach

<sup>1</sup> Davis, K. 2008. Extension in sub-Saharan Africa: Overview and assessment of past and current models and future prospects. *Journal of International Agricultural and Extension Education* 15(3): 15–28.

During the 2000s, these systems approaches evolved into the agricultural innovation systems approach. An innovation system includes all the actors that bring new products, processes, and forms of organisation into economic use.<sup>2</sup> The framework includes the institutions and policies that affect how the actors interact. For more information see Global Good Practice Note 13 (p. 9 in this volume).

Other extension philosophies are based on adult education. These include the United States cooperative extension system, farmer field schools (FFS) (Note 2; p. 61 in this volume), and farmer study circles (Note 20; p. 57 in this volume). Many of these approaches are based on work of the Brazilian educator Paulo Freire, who called for empowerment through education rather than a 'banking' approach to learning where the empty learner receives 'deposits' from the teacher.

There are many more philosophies that are based on empowerment principles. These include farmer first, farmer-to-farmer extension (Note 7; p. 53 in this volume), and other participatory approaches.

## Implementation

Here we define methods as specific tools or mechanisms to achieve a programme goal. This section describes a number of extension methods, their strengths and weaknesses, implications for gender and marginalised groups, cost implications where known, best-fit considerations, and sustainability.

Extension methods can be divided into individual approaches (one-on-one advisory services either face-to-face, by telephone, or via the internet) and group approaches. Group approaches, which include demonstrations and mass media, are used by methods such as FFS. They are more cost-effective than individual approaches. However, many farmers do need individual advice.

### Mass media

Mass media approaches include leaflets, pamphlets, posters, radio (Note 18; p. 99 in this volume), television (Note 22; p. 107), websites (Note 16; p. 115), and text or audio messages via mobile phones (Notes 3 and 17; pp. 91 and 95). Mass media can reach many people at little cost. However, it is difficult to communicate complex information via mass media; they work better with simple messages. Also, some people (especially women) do not have access to mass media, or cannot read or speak the language used.

### Demonstrations

Crops and practices can be demonstrated in a farmer's field, on a research station, or at an agricultural show or fair. While

demonstrations can be convincing, there are drawbacks. One is that people must be present to see them; another is that people may feel unable to follow suit because they don't have the resources. One way to deal with this is to hold demonstrations by farmers on their own fields. This is especially useful when trying to reach women and other marginalised groups. Demonstrations can be quite expensive in terms of setting up the practice and bringing people to the site; and they have little sustainability unless they are permanent fixtures on farmers' fields.

### Training-and-visit system (T&V)

Under the transfer-of-technology approach, the T&V system was introduced to transfer the latest technologies and practices from research to farmers. The T&V system was used to address a lack of professionalism and improve the accountability of extension agents. Advantages include regular farm visits, continuous training for agents, and a more professional approach to extension. Disadvantages are that it is top-down, rigid, and financially unsustainable. The costs include large numbers of personnel, and their continuous training and management.

### Farmer field schools (FFS)

Farmer field schools take an adult education, participatory, group-based approach. They are used in over 90 countries on many different topics, from integrated pest management to business management. Farmer field schools are especially good for teaching complex practices that must be experienced to be understood, and experiential learning and discovery learning are critical elements of this method. The approach can also be used for empowerment, and for building social capital. Farmer field schools do require a different mindset than most extension agents have – facilitation rather than lecturing. They have been shown to be effective at reaching women and those with less education.<sup>3</sup> The intensive training offered over a long period is costly in terms of human and financial resources, and FFS have been criticised for being financially expensive. However, self-financed and semi-self-financed models can help to deal with sustainability issues and the costs of an external facilitator, transport, and setting up and maintaining demonstration plots – for example, farmers may pay back the costs of the facilitator using proceeds from sales from their plots.

### Theatre

Theatre is a useful tool to put across key messages in a powerful, memorable way. While it has been used for some time for HIV/AIDS messages, it is now being used for climate change and other complex topics. Theatre is effective because it is entertaining and has an impact, but it is time- and resource-intensive. Special skills are needed to put together

<sup>2</sup> Hall, A., Janssen, W., Pehu, E. and Rajalahti, R. 2006. *Enhancing agricultural innovation: How to go beyond the strengthening of research systems*. Washington, DC: World Bank.

<sup>3</sup> Davis, K., Nkonya, E., Kato, E., Mekonnen, D.A., Odendo, M., Miiro, R. and Nkuba, J. 2012. Impact of farmer field schools on agricultural productivity and poverty in East Africa. *World Development* 40 (2): 402–413.

good scripts, and unless local capacity is developed and used, sustainability is non-existent.

### Videos and ICTs

Videos, especially digital ones, are a relatively new technology. Videos may help to meet the challenges of disseminating information to farmers and reaching the poor, marginalised, women, and youth. Different types of video include documentary (describing events), institutional (promoting a project or organisation), instructional (developed by researchers with limited input from farmers), farmer-learning (made with farmers), and participatory (made by farmers). Videos have many benefits: entertainment value, the power of 'seeing is believing', clips can be readily available, and they are easily made in many local languages. However, drawbacks include the fact that equipment and power are required to view them. Also, they must be in a language that is easy to understand, and they are more costly to produce than a flyer or poster. Special technical capacities are needed. In terms of sustainability, video can be made locally, and one DVD can be shown multiple times to thousands of people. And Digital Green has shown, using a controlled evaluation, that video-enabled behaviour-change methods can bring a ten-fold increase in cost-effectiveness relative to a conventional extension system.<sup>4</sup> For more information see Note 6 (videos: p. 103).

On other ICTs see Note 11 (navigating ICTs: p. 85), Note 15 (social media: p. 111), Note 17 (mobile phones: p. 95), and Note 18 (radio: p. 99).

### Innovation platforms

Finally, innovation platforms can be a useful tool, especially for problem-solving with relevant actors in value chains or innovation systems. This tool can be very empowering for farmers. However, it takes a lot of time and effort to coordinate, and the high number of stakeholders makes management a bottleneck, and sustainability an issue. Capacities needed by extension include facilitation and coordination. For more information see Note 1 (p. 44).

### Governance, funding, and delivery

In this section we cover more recent developments in extension over the past few decades. The governance of extension methods depends on each country's governmental structure and administration of its extension programme.

In economic theory in general, and international development in particular, the 1980s and 1990s was a period of focus on the market to solve economic and development problems.

There was criticism of 'bloated' civil service functions such as government extension, where the outcomes and impact did not necessarily justify the costs of salaries and operations. Around that time, institutions loaning money to countries for development, including the International Monetary Fund and the World Bank, began to introduce structural adjustment programmes – policies attached to new loans that encouraged economic reforms such as privatisation and deregulation. Criticisms of the existing models of extension led to various types of reform, described below.

### Privatisation and pluralism

Privatisation involves the transfer of some or all ownership and operational control of extension from government to the private sector. Privatisation results from the desire to reduce the role of government due to central government failings or the complexity of local issues; inability of governments to finance services; or the view that democracy is best served through devolved functions with more participation at local level.<sup>5</sup> However, experience has been mixed. While the process has led to the emergence of private consulting companies, small farms – especially those with limited resources to buy extension services – are left out by the private sector unless special public funding is provided to support them.

In this context, recognising the potential contributions of other extension players has led to the concept of pluralism in extension. Pluralism is essentially the coexistence of a number of extension providers and approaches from different sectors. Pluralistic systems recognise the comparative advantages of different types of provider. Coordination is essential in pluralism to prevent duplication of effort and to ensure synergy.

### Decentralisation

Decentralisation means transferring control of programme planning and management to the level of implementation. This is thought to improve accountability to local users and provide more appropriate programming. However, in many countries decentralisation has resulted in weakening of financial and technical support, and many local governments lack the necessary capacity.

### Demand-driven approaches

In this type of approach, farmers are given space to identify their needs and their requirements of extension programmes. Thus they need sufficient capacity and organisation to aggregate their demands, which means strengthening the capacities of farmer groups to articulate their needs and monitor service provision. Participatory extension approaches ensure that services are relevant and responsive to local

4 Gandhi, R., Veeraraghavan, R. and Toyama, K. 2009. Digital Green: Participatory video and mediated instruction for agricultural extension. *Information Technologies & International Development* 5 (1): 1–15. Available at: <http://itidjournal.org/index.php/itid/article/view/322>

5 Rivera, W.M. 2011. Public sector agricultural extension system reform and the challenges ahead. *Journal of Agricultural Education and Extension* 17 (2): 165–180. Available at: <http://www.tandfonline.com/doi/full/10.1080/1389224X.2011.544457>

conditions, and meet actual user needs.<sup>6</sup> Service providers are accountable to users, and ideally users should have a choice of service providers.

### Market-oriented services

Market-oriented extension provides services focused on linking farmers to markets, often to improve their income. This type of extension may also involve providing services to other actors in the value chain. Currently there is an increasing demand for such market-oriented services.

In conclusion, all philosophies – and methods – have advantages and disadvantages. It is up to each extension manager to decide what works best in their own context, keeping in mind the nature of the challenge, the clients' demands, and the resources available for intervention.

### Further reading

Davis, K. and Heemskerk, W. 2012. Investment in extension and advisory services as part of agricultural innovation systems. In World Bank (ed.) *Agricultural innovation systems: An investment sourcebook*. Washington, DC: World Bank. Available at: <http://siteresources.worldbank.org/INTARD/Resources/335807-1330620492317/9780821386842.pdf>

Davis, K., Nkonya, E., Kato, E., Mekonnen, D.A., Odendo, M., Miiro, R. and Nkuba, J. 2010. *Impact of farmer field schools on agricultural productivity and poverty in East Africa*. IFPRI Discussion Paper 992. Washington, DC: International Food Policy Research Institute. Available at: <http://www.ifpri.org/publication/impact-farmer-field-schools-agricultural-productivity-and-poverty-east-africa>

Hoffmann, V., Gerster-Bentaya, M., Christinck, A. and Mamusha Lemma, M. 2009. *Rural extension handbook, Volume I: Basic issues and concepts*. Weikersheim, Germany: Margraf Publishers.

Rivera, W.M. and Sulaiman V, R. 2009. Extension: object of reform, engine for innovation. *Outlook on Agriculture* 38(3): 267–273.

Sulaiman V, R. and Hall, A.J. 2002. *Beyond technology dissemination – Can Indian agricultural extension re-invent itself?* Policy Brief 16. New Delhi: National Centre for Agricultural Economics and Policy Research. Available at: [http://www.ncap.res.in/upload\\_files/policy\\_brief/pb16.pdf](http://www.ncap.res.in/upload_files/policy_brief/pb16.pdf)

### Training materials

New Extensionist Learning Kit, Module 2 – Adult learning and behavioural change: <http://www.g-fras.org/en/activities/the-new-extensionist.html#learning-kit>

Ochola, W., Heemskerk, W. and Wongtschowski, M. (eds.) 2013. *Changing agricultural education from within: Lessons and challenges from the GO4IT programme*. Amsterdam: RUFORUM and KIT Publishers. Available at: [http://213ou636sh0ptphd141fqi1.wpengine.netdna-cdn.com/sed/wp-content/uploads/publications/5373318064d97\\_KIT\\_GO4IT\\_final.pdf](http://213ou636sh0ptphd141fqi1.wpengine.netdna-cdn.com/sed/wp-content/uploads/publications/5373318064d97_KIT_GO4IT_final.pdf)

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This content was originally published in September 2016 as GFRAS Global Good Practice Note 0, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the International Food Policy Research Institute (IFPRI) and the Centre for Research on Innovation and Science Policy (CRISP) with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

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<sup>6</sup> Rivera, 2011. Op. cit.

# Section I

## **Governance and structure**



# Agricultural innovation systems

Rasheed Sulaiman V

## Introduction

Generating and applying new knowledge is important for all enterprises, including farming. But, quite often, new knowledge that can enhance productivity, competitiveness, and sustainability in farming is not widely adopted at scale. This lack of innovation in agriculture has led to the search for new frameworks such as 'innovation systems' that help in understanding how the process of agricultural innovation takes place and how its relevance and quality can be enhanced.

An innovation system is nothing more than a metaphor to help understand the process of innovation, and to help consider how capacities for innovation can be developed.<sup>1</sup> Though originally developed to understand industrial innovation, this framework has been increasingly used to understand the process of knowledge generation and use in agriculture. Recent research has resulted in new and better understanding of the structure and functions of the agricultural innovation system (AIS), which is defined as "a network of organisations, enterprises, and individuals focused on bringing new products, new processes, and new forms of organisations into social and economic use, together with the institutions and policies that affect their innovative behaviour and performance".<sup>2</sup> This interactive system is made of individuals and organisations that demand and supply knowledge, as well as the policies and mechanisms that affect the way different agents interact to share, access, and exchange knowledge (Figure 1).

Under the AIS framework, innovation is not merely concerned with technical innovation (e.g. adoption of a better variety). It also includes organisational innovation (e.g. organisation of farmers as groups) and institutional innovation (e.g. addressing uncertainties in land leasing through policy changes). Donors and national governments currently recognise the importance of enhancing the capacity of all actors in the AIS instead of just research or extension. This arises from the realisation that neither research knowledge nor extension activities alone drive innovation. There is greater emphasis on investing in strengthening the capacity to innovate or the process through which different types of knowledge are combined to address specific issues.<sup>3</sup>



Figure 1. The agricultural innovation system

Source: GFRAS 2015

## Philosophy and principles

The AIS framework recognises innovation as an interactive process. Central to the process are the *interactions* of different actors and their ideas; the *institutions* (the attitudes, habits, rules, laws, norms, practices, and ways of working) that shape how individuals and organisations interact; and *learning* as a means of evolving new arrangements specific to local contexts. While interaction among the actors within the innovation system is critical for innovation, several institutional and policy barriers generally constrain effective collaboration and knowledge flows among these different actors. Advocating for changes in institutions and policies is therefore critical for innovation. In other words, innovation requires enabling a combination of technological, organisational, institutional, and policy change.

Though research, education, and extension are key components of AIS, these are usually not sufficient to bring knowledge, technologies, and services to farmers and entrepreneurs.<sup>4</sup> The idea of the AIS highlights the importance

1 Hall, A., Sulaiman, R., Beshah, T., Madzudo, E. and Puskur, R. 2009. Tools, principles or policies? Agricultural innovation systems capacity development. *Capacity.org*, Issue 37, September 2009.

2 Hall, A., Janssen, W., Pehu, E. and Rajalahti, R. 2006. *Enhancing agricultural innovation: How to go beyond the strengthening of research systems*. Washington, DC: World Bank.

3 Hall, A., Rasheed Sulaiman, V. and Bezkorowajnyj, P. 2008. Reframing technical change. Livestock fodder scarcity revisited as innovation capacity scarcity: a conceptual framework. Hyderabad, India: UNU-MERIT and ILRI South Asia.

4 World Bank. 2012. *Agricultural innovation systems: An investment sourcebook*. Washington, DC: World Bank.

of a large number of other actors possessing different types of knowledge (farmer and industry associations, market intermediaries, consumer groups, policy-makers, certifying agencies, credit and input suppliers, etc.) and their effective interactions for innovation. The process of interaction usually needs to be facilitated, as actors often need an initial push or opportunity to break barriers that prevent joint discussion, action, sharing, and learning. Innovation arises in a particular socio-economic context and is shaped by the presence or absence of favourable conditions in which it can thrive; therefore, understanding this context is important to facilitate innovation.

## Implementation

The AIS is increasingly recognised as a useful framework to diagnose innovation capacity, design investments, and organise interventions that appear most likely to promote agricultural innovation and equitable growth. The AIS framework can be applied at various levels: country, sector, or project/intervention level. However, most of the essential steps in using the AIS framework remain the same.

### Diagnosing innovation capacity

For initiatives that focus on strengthening innovation capacity, diagnosis of the AIS is the starting point. A four element tool for diagnosing innovation capacity<sup>5</sup> has been adapted and used in different contexts (Box 1). The four elements are:

1. **Actors and their roles:** What actors are relevant for agricultural innovation and what roles do they play? Are they sources of technical knowledge or engaged in value addition, output marketing, social mobilisation, institutional development, policy advocacy, coordination, or networking?
2. **Patterns of interaction that exist between different players:** Are certain actors better connected? Are key organisations isolated or well integrated into the wider set of activities and organisation in the system? How are these organisations linked?
3. **Institutions:** What are the habits, practices, traditions, and routines that cause organisations to behave the way they do with respect to how well they link? Do patterns of social, economic, and political power influence the way organisations work and how does this impact patterns of interaction?
4. **Enabling environment:** What are the key technical, policy, marketing, and environmental challenges and opportunities being faced? Are there science and technology policies to promote collaboration, to promote application of knowledge? How far do the different actors shape or influence the policy processes?

### Box 1. Innovation system diagnosis: smallholder dairying in Bihar<sup>6</sup>

Smallholder dairying plays an important role in the socio-economic development of Bihar, a state in eastern India. While several organisations exist for dairy development and there has been an increase in investment and interventions in this sector during the last decade, these are yet to contribute to increased milk productivity. Diagnosis of the AIS clearly revealed the diversity of organisations that need to be engaged to promote smallholder dairying. Clearly the sector needs coordination and collaboration among this wide range of actors. This is not easy considering the low level of trust among actors, low morale of veterinarians, the tradition of working independently, and weak capacities for coordination. Synergies are lacking between agricultural/livestock policy objectives and the programmes of relevant organisations outside it (such as industry, health, education, research, skill development). The diagnosis recommended addressing this policy incoherence by organising a multi-stakeholder policy working group (to address policy gaps, enhance capacities for policy implementation, and facilitate policy learning) as the first step in enhancing the innovation capacity of this sector.

### Facilitating interactions and knowledge flows among the selected actors

The diagnosis of an AIS provides insights on the nature of barriers that constrain interaction and the opportunities that could be strengthened to promote interaction. There are several ways to promote interaction.

- **Innovation platforms:** Innovation platforms are increasingly used to bring different actors together to discuss and negotiate collective or coordinated action.<sup>7</sup> They comprise various actors who communicate, cooperate, and carry out activities needed for innovation to occur. Platforms can exist at multiple levels. Local platforms tend to address specific problems or opportunities such as improving the efficiency of a specific value chain. Platforms at national and regional levels often set the agenda for agricultural development and allow stakeholders, including farmers through their representatives, to influence policies. Several such platforms were set up under the aegis of the Forum for Agricultural Research in Africa and DFID's Research Into Use programme in Africa.<sup>8</sup>
- **Innovation brokering:** Any advisory service or related individual or organisation can broker, connecting farmers to service providers and other actors in the agricultural food chain. Recent years have witnessed greater interest in investing in innovation brokering. Innovation brokering differs from traditional extension and research because it

<sup>5</sup> Hall et al. 2006. Op. cit.

<sup>6</sup> Sulaiman, R.V. and Vamsidhar Reddy, T.S. 2015. *Policy incoherence in smallholder dairying in Bihar*. ILRI Discussion Paper 33. Nairobi, Kenya: International Livestock Research Institute (ILRI).

<sup>7</sup> Posthumus, H. and Wongtschowski, M. 2014. *Innovation platforms*. Note 1, GFRAS Good Practice Notes for Extension and Advisory Services. Lindau, Switzerland: GFRAS.

<sup>8</sup> Ibid.

represents the institutionalisation of the facilitation role, with a broad, systemic, multi-actor, innovation systems perspective.<sup>9</sup>

- **Innovation grants:** Funding (competitive grants/matching grants) is often used to incentivise collaboration and joint action among different actors in the AIS. For instance, in India, the National Agricultural Innovation Project funded promising multi-stakeholder consortia and research alliances comprising organisations from the public, private, and nongovernmental organisation (NGO) sector through a competitive process. The consortium members were jointly responsible for governance, design, and implementation of these programmes. Similarly, the Food & Business Applied Research Fund of the Netherlands provides grants for applied research contributing to innovation for food security and private sector development only to consortia having local practitioners and researchers.
- **Innovation management:** Innovation involves a wide range of functions, activities, and tools performed by agencies that work through platforms, alliances, or partnerships, collectively referred to as innovation management. While facilitating access to technology is important in putting new research-derived knowledge into use, it has value only when it is bundled together with other innovation-management tasks (Table 1).<sup>10</sup> Identifying the right actors with different capacities is important for enabling innovation.

### Facilitating policy changes

- **Policy working groups:** Accelerating institutional and policy changes is critical for innovation. Organising policy working groups comprising key policy influencers around a specific theme can help in accelerating policy changes that enable innovation. Working groups can also help bridge knowledge–practice–policy gaps through a shared understanding of the role of different actors and facilitate development of coherence around different policy instruments.
- **Sector coordination agencies:** Coordination and collective action are important for innovation. In many countries, organisations for coordination at the national level exist (e.g. apex research councils and commodity boards). Though they rarely coordinate activities of actors or prioritise investments for innovation, they could play a useful role, if adequately capacitated.
- **Innovation support facility:** In situations where the national agencies lack the mandate and capacity for coordinated action for innovation, new structures or facilities to support innovation must be established. Such facilities should have a national mandate and adequate funding. The facility should have capacity to govern the wide range of stakeholders,

**Table 1. Innovation management tasks observed in Research Into Use Asia projects**

Functions	Actions	Tools
<ul style="list-style-type: none"> <li>• Networking and partnership-building</li> <li>• Setting up/strengthening user groups</li> <li>• Training</li> <li>• Advocacy for institutional and policy change</li> <li>• Enhance access to technology, expertise, markets, credit, and inputs</li> <li>• Reflective learning</li> </ul>	<ul style="list-style-type: none"> <li>• Convening</li> <li>• Brokering</li> <li>• Facilitating</li> <li>• Coaching</li> <li>• Advocating</li> <li>• Disseminating information</li> </ul>	<ul style="list-style-type: none"> <li>• Grain cash seed bank</li> <li>• Community-based seed producer groups</li> <li>• Community-based user groups</li> <li>• Producer companies</li> <li>• NGO-led private companies</li> <li>• Market-chain analysis</li> <li>• Market planning committees</li> <li>• Community germplasm orchards</li> <li>• Village crop fairs</li> <li>• Food-processing parks</li> <li>• Use of lead entrepreneurs</li> </ul>

experiment with different approaches, monitor and evaluate outcomes, assess impacts, influence policies, and support learning. The Agricultural Research and Development Support Facility established in Papua New Guinea is a good example of this type of facility.<sup>11</sup>

### Extension and AIS

Extension and advisory services (EAS) are integral to the AIS. The great value of the AIS framework for extension is that it allows the role and organisation of extension to be understood as part of a wider canvas of actors, processes, institutions, and policies that are critical for innovation. EAS could better contribute to the process of innovation if they would expand their conventional technology transfer role by including more functions, especially related to facilitation, brokering, and enhancing the capacity of the actors in the AIS to provide integrated support to farmers.<sup>12</sup> EAS could support the innovation process by:

- organising producers and the rural poor and building their capacities to deal with production, natural resource management, and marketing challenges, and also promoting farmer-to-farmer exchange of information
- building coalitions or platforms to facilitate development of consortia of different organisations to address specific issues (value chain development, participatory irrigation

9 Klerxx, L. and Glidemacher, P. 2012. The role of innovation brokers in agricultural innovation systems. In: *Agricultural innovation systems: an investment source book*. Washington DC: The World Bank.

10 Sulaiman, V.R., Hall, A. and Vamsidhar Reddy, T.S. 2014. Innovation management: a new framework for enabling agricultural innovation. *Productivity*, 55(2): 140–148.

11 Mbabu, A.N. and Hall, A. (eds). 2012. *Capacity building for agricultural research for development lessons from practice in Papua New Guinea*. Maastricht, The Netherlands: UNU-MERIT.

12 Rasheed Sulaiman, V. 2012. Extension-Plus: new roles for extension and advisory services. In: *Agricultural innovation systems: an investment source book*. Washington DC: The World Bank.

management, etc.) and also for information sharing and learning.

This means that EAS would have to interact and partner with a wide range of organisations dealing with markets, policy, financing, and also with sources of technical knowledge. But to play these roles it needs new capacities at different levels.<sup>13</sup>

## Strength and weaknesses

### Strengths

- AIS explicitly recognises the complementary knowledge and expertise held by different actors and the importance of combining different types of knowledge (technical, institutional, policy, etc.) through facilitated interactions for innovation to happen.
- AIS highlights the existence and importance of several types of innovation processes and the importance of institutional and policy changes that facilitate innovation processes.
- For EAS, the application of AIS is helping them to widen the role from an agency for technology delivery to an enabler of innovation processes.

### Weaknesses

- The AIS framework presents and recognises a diversity of approaches to be experimented and adapted for innovation, but it is not a blueprint for organising innovation in agriculture, even though it is often considered as such.
- There has been a tendency to 'cherry pick' innovation system ideas such as innovation platforms and public–private partnerships, and apply the concept to existing transfer-of-technology type of initiatives, without considering the institutional and policy reforms and learning and capacity development ideas inherent to the AIS framework.
- Competencies needed for facilitating interactions among different actors within AIS are often scarce and many funders are unwilling to invest in such intangible capacity development efforts, which yield impact over the medium or long term.
- In general, operational skills in managing innovation such as facilitation, brokering, and relationship building are in short supply and there are not enough professionals who can coach those interested in piloting and learning from AIS approaches.

## Potential impact

While there is an increasing appreciation of the AIS framework and many organisations are interested in using it, there is little progress on using these ideas holistically to reform agricultural innovation arrangements. Governments can play an important

role in creating enabling conditions for agricultural innovation through coordination, promoting horizontal and interactive working approaches, strengthening knowledge management, and creating networks for managing partnerships.<sup>14</sup> As the focus of AIS is on accelerating institutional and policy changes that enhance the capacity for innovation, the impact of AIS has to be ideally evaluated on these changes. Research on understanding and attributing impact of AIS is in progress. Though there are many ways to monitor and evaluate the impact of these changes, capacities to experiment with interventions and monitor, evaluate, and learn from the results of these experiments have to be built among the actors in the AIS.

## Training materials

e-Institute for Development E-learning course on Agricultural Innovation Systems (AIS), World Bank Group: <http://worldbank.mrooms.net/course/view.php?id=791>

## Further reading

Nederlof, S., Wongtschowski, M. and van der Lee, F. (eds.) 2011. *Putting heads together: agricultural innovation platforms in practice*. Bulletin 396. Amsterdam, The Netherlands: KIT Publishers.

Rajalahti, R., Janssen, W. and Pehu, E. 2008. *Agricultural innovation systems: from diagnostics toward operational practices*. Agricultural and Rural Development Discussion Paper 38. Washington, DC: World Bank.

Reaching Rural Women website:  
<http://www.reachingruralwomen.org>

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 13, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the Centre for Research on Innovation and Science Policy (CRISP) with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

<sup>13</sup> Sulaiman V, R. and Davis, K. 2012. *The new extensionist: roles, strategies and capacities to strengthen extension and advisory services*. GFRAS Position Paper. Lindau, Switzerland: GFRAS.

<sup>14</sup> IICA. 2014. *Innovation in agriculture: a key process for sustainable development*. Institutional position paper. San Jose, Costa Rica: Inter American Institute for Cooperation on Agriculture.

# Innovative financing mechanisms for demand-driven agricultural advisory services

Magdalena Blum and Sanne Chipeta

## Philosophy and principles

### Why do we need demand-driven agricultural advisory services?

The rapidly changing economic, climatic, and social environment for agriculture worldwide is causing farms to become increasingly diverse in terms of size, resources, production patterns, access to markets, and household characteristics.<sup>1</sup> So there is a strong need for more diverse and specialised agricultural advisory services (AAS) that are relevant to farmers. This requires rethinking ways of organising and financing AAS towards systems that are led and tailored by demand from farmers.

### What are demand-driven agricultural advisory services?

Demand-driven AAS represent a break from the earlier understanding of agricultural producers as beneficiaries of services. Instead, in demand-driven AAS the users' demands define the content, quality, and mode of delivery.<sup>2</sup> The main principles are:

- services are based on user demand
- service providers are accountable to users, particularly on content and quality
- users have a choice of service providers.

### What are the principles of financing mechanisms that empower users?

Demand-driven AAS require innovative financing mechanisms that enable farmers, their organisations, and communities to take greater responsibility and negotiate the services they want from a variety of qualified service providers who are accountable to farmers. Existing financing mechanisms that primarily support the supply side (AAS providers) are not appropriate for this purpose.

While public sector funding for pluralistic AAS remains crucial in the fight against poverty and food insecurity, the financing and delivery of advisory services do not need to be through the same institution; these two functions may be performed by different organisations.

The *Common framework on financing agricultural and rural extension*<sup>3</sup> provides policy advice regarding different financing mechanisms that promote empowerment of service users through increasing service providers' accountability towards users. This may be achieved by:

- financial participation by users
- direct payment for services by users
- indirect payment through membership fees, production levies, taxes, etc. combined with farmers/farmer organisations (FOs) being involved in decision-making on the use of these funds
- public or donor funds channelled through users or their organisations to pay for services
- service provision by producer-owned organisations.

Figure 1 illustrates the change in the flow of funds, with demand-side financing illustrating the new approach.

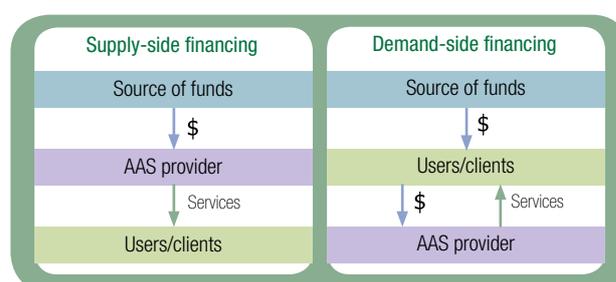


Figure 1. Supply-side and demand-side financing of AAS

## Innovative financing mechanisms

Examples of fully demand-driven services are few, but some innovations have been implemented. Four different models of innovative financing mechanisms have been identified.<sup>4</sup>

### Farmer organisation-owned advisory systems/ services with public subsidies combined with farmer payments

Some national FOs choose to provide their own advisory services, such as the Danish Agricultural Advisory Service (DAAS); National Smallholder Farmers' Association of Malawi

1 FAO. 2014. *The state of food and agriculture: Innovation in family farming*. Rome: Food and Agriculture Organization of the United Nations. Available at: <http://www.fao.org/3/a-i4040e.pdf>

2 Neuchâtel Group. 2002. *Common framework on financing agricultural and rural extension*. Available at: <http://www.g-fras.org/fileadmin/UserFiles/Documents/Frames-and-guidelines/Financing-RAS/Common-Framework-on-Financing-Extension.pdf>

3 Neuchâtel Group. 2002. Op. cit.

4 Based on a recent study by FAO which includes four different cases along with relevant literature describing like-minded models: Chipeta, S. and Blum, M. Forthcoming. *Innovations in financing mechanisms for demand-driven agricultural advisory services. Framework for analysis and synthesis of experiences*. Rome: Food and Agriculture Organization of the United Nations.

(NASFAM); and ProAgria in Finland. In all these cases, AAS are provided by advisers employed by FOs and financed partly by public subsidies, partly by farmers' own contributions, the latter increasing over time.

### Decentralised services with public financing of demand-driven processes and services

In this mode, farmers/FOs are involved in articulating their demands and defining who provides which kind of services to them. Examples include Senegal's Agricultural Services and Producer Organisations Support Programme (PSAOP); Tanzania's District Development Funds; Coordinadora Nacional de las Fundaciones Produce (COFUPRO) in Mexico; Corporación Colombiana de Investigación Agropecuaria (CORPOICA) in Colombia; Fadama II in Nigeria; and Decentralised Agricultural Extension through Farmer to Farmer Extension in Nepal.

### Public sector-driven privatisation of services through competitive grants and contracts

Some countries aim to improve the effectiveness of AAS by supporting privatisation of services through public competitive grants and contracts available to different types of service provider, including civil society organisations, private enterprises, and FOs. Examples are the Chilean Institute for Agricultural Development (INDAP); Innovation and Competitiveness Programme for Peruvian Agriculture (INCAGRO); and former National Agricultural Advisory Services<sup>5</sup> in Uganda. Some competitive grants are combined with users' financial contributions.

### Producer cooperative-based embedded services fully financed by own processing and marketing revenue

Globally there are many examples in operation where producer cooperatives provide AAS to their members and finance core services through the revenue gained by marketing their produce. Several of these are dairy cooperatives, such as the Nariño Dairy Products Cooperative (Colácteos) in Colombia. Other commercial organisations, including the Colombian Coffee Growers' Federation, also have outstanding experience.

## Capacities required

Compared with traditional financing systems, demand-led systems require substantial new capacity, both institutional and managerial.

**Smallholder farmers' capacity:** Smallholder farmers and their FOs need to be able to develop and negotiate their priorities, to evaluate services, and to hold service providers accountable for quality and effectiveness.

**Finance and administration systems:** Because financing mechanisms must be transparent and some of the models are complex, there is a need for new skills in terms of developing and implementing innovative financing mechanisms, as well as raising, managing, and administering the related financing streams, grants, and other funds.

**Local institutions' ability to manage financing systems:** Systems with decentralised funding of services often require long-term efforts to build local capacity to facilitate and provide demand-led AAS, for example in dealing with public procurement, contracts, and general financial management.

### Advisers with the knowledge and skills that farmers require:

A major challenge for AAS worldwide is adjusting to the rapid changes in the agricultural sector. It is essential for advisers to keep in tune with farmers' needs. Advisers need to be able to deal with the ever-increasing flow of knowledge, structural changes in the sector, and new market developments, and to operate with the producers' own food and growth strategies. Educational institutions with curricula that respond to these requirements are crucial.

### Dealing with political changes and shifts in government

**priorities:** This requires FOs that are empowered to analyse policies and legal channels for advocacy and to participate in policy and other decision-making processes. This is particularly important for AAS systems that rely primarily on public funding, and where government has a strong hand in governing the service agencies.

## Costs

Costs related to financing systems for pluralistic, demand-led AAS systems are:

- management and administration within institutions
- developing capacity of demand-side institutions –
  - strengthening FOs
  - installing systematic demand mechanisms
  - FOs managing and evaluating AAS
- supply of services with an emphasis on –
  - developing capacities of service providers to advocate for their services and to respond to demands and changing needs
  - back-up services involving institutional, organisational, and human capacity development.

The overall costs of management and supply of services are not different from conventional systems.

## Strengths and weaknesses

Experience so far shows both strengths and weaknesses of demand-side financing of AAS (Table 1).

<sup>5</sup> NAADS was officially dissolved in 2015.

**Table 1. Strengths and weaknesses of demand-side financing of AAS**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>Promote empowerment of farmers and accountability of service providers towards them</li> <li>Can ensure relevance to different categories of farmers and adaptation to change</li> <li>Increase effectiveness in terms of quality and results</li> <li>High degree of ownership of farmer-driven and -managed AAS</li> </ul>	<ul style="list-style-type: none"> <li>Substantial organisational and individual capacity development required, with sufficient time and resources</li> <li>Transparency of financing mechanisms and demand-led processes required but not sufficient in existing systems</li> <li>Need promotion of pluralistic services so that farmers have a choice</li> <li>Vulnerable to political will and policy instability</li> </ul>

### Best-fit considerations

Demand-driven financing mechanisms for AAS require an enabling environment to function well. There is a need for strong and healthy institutions close to their users. Local institutions and FOs need to have, or to be ready to develop, the capacity and procedures to become relevant, transparent, and accountable to users and members.

There also needs to be consensus on conducive policies and willingness by policy- and decision-makers to promote pluralism in service delivery, and to move the responsibility as well as the decision-making power to users.

Demand-driven financing works most effectively when services connect with activities that raise farmers' incomes,<sup>6</sup> for example by increasing market opportunities. Some INDAP programmes that connect to agribusiness succeed by focusing on productivity and commercialisation, whereas farmers who

have no additional opportunities for commercial production have little incentive to engage.

### Governance

Institutional good governance and accountability have proven to be required for success. This means that institutions should ensure farmers and their FOs participate in decision-making regarding resource mobilisation, financing mechanisms, and contract allocation as well as planning, implementation, and evaluation of advisory services. This includes their full and practical representation in policy processes and decision-making bodies, procedures to evaluate services by farmers (e.g. through SMS), systemic mechanisms to develop demand and to link demand with qualified service providers, and contracting of AAS.

### Evidence of impacts, sustainability, and scalability

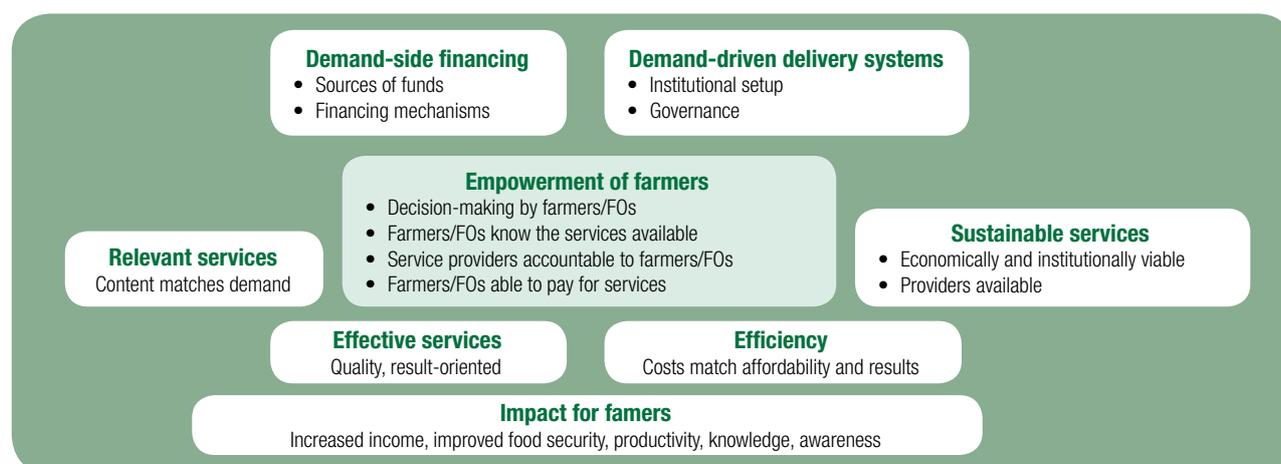
#### Impacts

The framework in Figure 2 shows the expected results of demand-side financing combined with demand-driven delivery systems.

**Empowerment of smallholder farmers:** Improved knowledge regarding available services and financing mechanisms enhances users' capacity to access the services they need. Service providers are thus accountable to users.

**Increased relevance of services:** When farmers are engaged in financing, planning, and governing AAS, they become empowered to demand services that respond to their needs in terms of both content and quality.

**Increased effectiveness and efficiency in quality and results:** Experiences of effectiveness<sup>7</sup> and efficiency are mixed in the different models. Where implementation has been successful,



**Figure 2. Results framework**

<sup>6</sup> As is the case with DAAS and Colácteos.

<sup>7</sup> There are many factors influencing the effectiveness of AAS, and it is difficult to separate the effect of the financing mechanism from other factors in the systems (education, back-up support, management). None of the experiences so far has been subject to in-depth studies on effectiveness. The assessment here is based on documentation of experience and interviews with key stakeholders.

the services have been effective in increasing productivity, product quality, and access to markets.

### Sustainability

There is a strong relationship between commercial market integration of farmers and sustainability of systems. This includes the ability and willingness of farmers to contribute financially from their own funds. For small-scale farmers with a weak connection to markets, public subsidies are required to increase their purchasing power (e.g. through demand-side financing) as well as securing their interest in the services.

### Lessons learned

Several lessons have been learned from the different models.

**Long-term political commitment:** Institutional development of a demand-driven AAS system including demand-side financing is a long-term affair involving great efforts in institutional and human capacity development, and requires consensus among stakeholders. Publicly funded models depend on continuous political commitment for as long as it takes for the systems to mature. This often conflicts with the political reality of governments needing to show fast results within an election period. Governments are therefore often impatient with the delivery of results of long-term institutional development.

**Organisational capacity and experience are crucial:** The participation of FOs and local institutions with good capacity strongly stimulates the demand drive and empowerment of farmers. At the same time, the organisational experience that farmers and their FOs gain through their involvement in AAS policy processes and management are likely to be beneficial in other aspects of the agriculture sector, such as marketing cooperatives and breeding associations.

**Availability of qualified service providers:** Success requires that a pool of qualified service providers is available in rural areas, so that farmers have a real choice of providers. This may require that the demand-side financing of AAS is integrated with promoting pluralistic services, and reform regarding education, back-up services, and research.

**Market opportunities:** Demand-driven financing works most effectively and produces the strongest results when the services are connected to activities that increase market opportunities for participating farmers, hence improving their income and livelihoods, and the rural economy.

**Gender equality in accessing services:** Without a specific gender policy, women farmers rarely benefit from AAS financed via either the demand side or the supply side. Service organisations, whether service companies or FOs, need to have firm gender policies for women to be represented in decision-making so that

service providers employ women advisers, and are in a position to respond to women's needs and demands.

### Recommendations for application and scalability

Based on these lessons learned, a number of general recommendations are relevant to future development of similar models.

- Develop policy consensus to ensure adequate ownership of the process by stakeholders nationally and locally. Farmers and/or FOs should take responsibility for driving demand and the management of AAS, while the relevant government authorities need to focus on and strengthen their regulatory and facilitating roles.
- Make allowance for both time and resources to develop the capacity of farmers and FOs to formulate demands, know what services are available, monitor services, and manage their funds and organisations.
- Based on user demand, consider financing educational programmes, in-service training, and back-up services. Promote links within the innovation system, particularly to research and the private sector.
- Promote new and innovative demand-led financing mechanisms for AAS, for example through production levies, taxes on imported food, or other funds for AAS programmes managed by FOs or boards with a majority of farmer representatives.
- Facilitate market opportunities for smallholders alongside demand-oriented financing systems. This can encourage farmers' interest in contributing financially to services, which promotes real interest in the services and their quality.

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This content was originally published in November 2016 as GFRAS Global Good Practice Note 21, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the Food and Agriculture Organization of the United Nations (FAO) with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

The views expressed in this publication are those of the author(s) and do not necessarily reflect the views or policies of the Food and Agriculture Organization of the United Nations.

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# Private sector provision of rural advisory services

*Bob Rabatsky and Matthew Krause*

## Introduction

Rural advisory services (RAS) provide farmers with training and information on agronomic and business best practices to help them maximise yields and profits. Such services can and should be offered by numerous stakeholders, including government, cooperatives, nongovernmental organisations (NGOs), and agribusinesses. In developing countries, traditional extension services offered through government agencies are often poorly funded and administered, leaving poor farmers to rely on other forms of technical advice, or none at all. The purpose of this note is to highlight the emergence of private sector-delivered RAS that aim to address the gaps in traditional government extension. Private sector RAS can serve a company's business goals while also providing farmers with the essential agronomic and business knowledge needed to be more productive and earn higher incomes. It is in the private sector's interest to engage with and improve their clients' farming practices in order to achieve increased company revenues and profits. This enables them to ensure commercial viability, resulting in long-term mutual benefits for farmers, employees, and shareholders.

## Philosophy and principles

Private sector agribusinesses such as input companies, service providers, and offtakers exist to create value by offering products and services demanded by the agricultural community. One critical way for these companies to capitalise on business opportunities and increase revenues is to build

the capacity and skills of their clients. Farmers who grow and expand their on-farm operations will not only be more valuable clients, but also will help raise awareness among late adopters in their communities. Lagging farmers who see their neighbours improving their livelihoods will take notice and, in some cases, change their practices to mimic this witnessed success.

In this note we highlight examples of agribusinesses that have decided to offer and embed agricultural services as a complement to their core business products and services. Private sector agribusinesses are seeing the value in expanding their RAS to poor farmers. Such approaches include organising and financially supporting demonstration plots, farmer field schools, education on good agricultural practices (GAP), and business and financial literacy training; providing links with markets and financial institutions; and showcasing model farms. Some agribusinesses have experimented with IT or mobile phone-based technologies to share and transfer technical information.

Agribusinesses that realise the value of RAS, and want to offer such services to their clients, must decide how to monetise them or otherwise recover the added costs. Some larger multinational companies cover these costs through corporate social responsibility or foundation contributions. Companies may also charge fees directly to clients by embedding these costs in product/service fees, or charging them through other cost centres such as marketing and promotion budgets.

## Implementation

Agribusinesses have unique business models, with product and service offerings that align with the realities of the environment and markets they serve. In this note we group agribusinesses into three broad categories, enabling us to discuss similarities in their RAS approaches and methodologies.

### Agricultural input supply companies

These are businesses focused on manufacturing, distributing, and/or selling agricultural inputs needed by farmers to cultivate crops and manage livestock. Such inputs include seeds, fertilisers, crop protection products, vaccines, and equipment such as tractors and irrigation systems. Input companies are motivated to provide embedded RAS to ensure farmers use their inputs correctly, benefit from links to offtakers



and financial institutions, and realise the yield and productivity benefits of their products, under the premise ‘a happy client is a returning client’. (An example is shown in Box 1.) Common RAS approaches include demonstration plots and farmer field days where a product is compared with traditional practices. The downside of this arrangement, from society’s perspective, is that the incentive for sales may override alternative approaches that do not include the company’s inputs. Also, agricultural input suppliers may not properly address environmental and health concerns related to their products.

### Box 1. Multi-product suppliers in India

Large, multi-product agricultural input suppliers, such as Hariyali Kisaan Bazaar and Tata Kisan Sansar in India, offer seeds, pest management products, fertiliser, soil testing equipment, and credit, in addition to in-house extension advice. Both companies have extensive retail distribution networks and diverse product offerings, resulting in sales volumes that can justify the cost of the additional services.<sup>1</sup>

### Service providers

A wide variety of service providers operate in the agricultural sector. Examples include financial institutions that provide loans to buy inputs or invest in farm assets, and commercial consulting firms and farmer cooperatives that provide training to farmers. Service providers may offer RAS either directly for a fee, or embedded within their other service provision. An interesting example is Opportunity Bank’s work with smallholder farmers in Malawi and Mozambique, where it couples financial products with face-to-face advisory services including GAP and financial literacy training (Box 2). Opportunity Bank found that default rates were lower among borrowers provided with RAS than among loan recipients who had not received RAS.

### Box 2. Service providers in Malawi and Mozambique

Opportunity Bank in Malawi and Mozambique contracted third parties UT Grain Management, Greenbelt Fertilizers, and Catholic Relief Services to provide smallholder farmer training on GAP. In collaboration with these organisations, the bank also provided complementary financial literacy training to improve farmers’ understanding of savings-and-loan products. This resulted in lower default rates on loans provided to over 15,000 farmers.

### Offtakers

Offtakers such as intermediary bulkers or food processors buy harvested commodities from farmers with the intent of adding value such as drying and cleaning, storing, packaging

and processing, marketing, and distribution. A critical factor for their success is to ensure the consistency and quality of the commodities they procure, so they naturally have an interest in improving the quality of produce and the productivity of their farmer clients. Advisory services may include providing GAP training, improving inputs, and facilitating product aggregation. These are most often embedded services that the offtaker builds into their cost of doing business, or that will be deducted when a farmer delivers a product for sale. An example is given in Box 3.

### Box 3. Offtakers in Benin

Tolaro Global is a cashew nut processor in Benin. It provides advisory services to 2,300 members of two farmer cooperatives. The services include agronomic training on weeding techniques, tree pruning, organic composting, fertilising, intercropping rotation, nut quality, and cashew harvesting and storage. Tolaro benefits from establishing a close relationship with its suppliers that results in more and higher-quality product. The farmers benefit from a 15% price premium from fair trade certification, and larger nut sizes.

### Capacities and costs required

In deciding if providing RAS to farmer clients is a worthwhile investment, agribusinesses must make critical decisions on the type and extent of the services they will provide, the human resources and equipment needed, and whether it is more cost-effective to build capacity in-house or to outsource the services. While designing and implementing these services using in-house resources may make long-term strategic sense, it can be very expensive and time-consuming. Alternatively, there may be existing firms on the market with the capacity to provide better services at lower cost. In either case, significant internal management and oversight will be required.

Critical skills and expertise that agribusinesses need to develop when providing RAS are:

- training provision in agronomy, business management, and financial literacy
- community mobilisation.

Some critical cost drivers for implementing RAS include:

- personnel
- land availability for demonstration plots
- facilities for training
- agricultural inputs/equipment
- development of training materials
- transportation
- monitoring, learning, and adjusting services in response to what has been learned.

<sup>1</sup> AFAQS. 2015. Godrej Aadhaar launches agri-services cum rural retail stores in Gujarat. *Company News*, 27 June. Available at: [http://www.afaqs.com/news/company\\_briefs/index.html?id=8986\\_Godrej+Aadhaar+launches+agriservices+cum+rural+retail+stores+in+Gujarat](http://www.afaqs.com/news/company_briefs/index.html?id=8986_Godrej+Aadhaar+launches+agriservices+cum+rural+retail+stores+in+Gujarat); Ferroni, M. and Zhou, Y. 2011. *Review of agricultural extension in India*. Basel: Syngenta Foundation for Sustainable Agriculture.



## Strengths and weaknesses

Private sector companies must analyse the following strengths and weaknesses to determine whether they should provide RAS to farmers.

### Strengths

- Potential to develop relationships with and loyalty of farmer clients, resulting in increased and more reliable future sales of products and services.
- Marketing and distribution capacity, providing opportunities to enter new markets more efficiently and with a greater chance of success in establishing a brand.
- Many technical RAS subjects may be already developed and understood in-house, making it relatively easy to roll them out to external clients.

### Weaknesses

- Upfront and ongoing costs of RAS can be high, and the company may not realise a return on its investment in sufficient time to justify the expense.
- There may be a perception that RAS is purely for product promotion, particularly for agricultural inputs, to drive sales revenue.
- Additional investment in human resource development may be needed to implement and manage RAS activities effectively.
- Small-scale businesses may not see benefits from providing costly RAS.

## Best-fit considerations

Private sector agribusiness-led RAS have the most impact on farmers' and businesses' efficiency and profitability where publicly supported extension services are absent or ineffective. Private sector-led RAS are most likely to be effective for both

provider and client where there is a demonstrated need and demand for these services, and in areas where donors and/or NGOs are actively supporting private companies' RAS development and implementation.

Companies may be successful in areas with few existing RAS by becoming a market leader that offers these additional services; but they may also find success in markets with existing RAS offerings by following the lead of other companies or providing complementary services. Other factors affecting agribusinesses' decision to provide RAS to small-scale farmers include their willingness to engage farmers over the long term, the proportion of supply that the small-scale farmers control, and whether side-selling (farmers selling to other offtakers) is a problem.

## Governance

Governments must create an enabling environment where multiple stakeholders are encouraged and financially incentivised to participate in RAS. RAS work best when the public and private sectors work together to improve farmers' capacities. While government may not be in a position to provide RAS, they can provide other support services such as improved power, water, road, and market infrastructure; reliable market information; and access to higher education and agricultural research services. The public sector can also ensure that environmental and social priorities are not neglected.

## Evidence of impacts, sustainability, and scalability

To justify investment in RAS, private sector agribusinesses must see that this additional investment has a positive effect on their bottom line. They must be able to attribute improved farmer performance, increased product sales, and better brand

recognition/loyalty directly to the RAS provided. Costs incurred for RAS must be considered a cost of doing business.

As well as increased sales revenue, there are a number of other ways in which companies can recover the costs associated with RAS and thus ensure sustainability. A company can charge farmers a service fee, but this is difficult for smallholders with limited capital who struggle to invest in production costs in the first place. More commonly, companies offer short-term production credit through, for example, an agrodealer, and recover the cost at harvest. These trade loans may be internally financed, or a company could partner with a financial institution or donor-funded programme to defer their RAS costs. The downside of using the donor option is that these programmes are short term and therefore are not sustainable

### Further reading

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This content was originally published in August 2017 as GFRAS Global Good Practice Note 29, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by Feed the Future Partnering for Innovation with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Feed the Future Partnering for Innovation is a United States Agency for International Development (USAID) programme that helps the private sector scale and market agricultural innovations for smallholder farmers through investing in technology commercialisation and knowledge exchange. Through its online community, the AgTechXChange (<http://agtech.partneringforinnovation.org>), the programme facilitates connections and knowledge sharing among entrepreneurs, investors, and nonprofit organisations.

The publication of this note was made possible in part by the generous support of the American people through USAID. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# The role of producer organisations in rural advisory services

Aurélie Toillier, Mahesh Chander, Guy Faure, Phillipe Somé, and Michel Havard

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## Introduction

Producer organisations (POs) form the interface between farmers and their economic, social, and institutional environments (Box 1). The involvement of POs in the provision of rural advisory services (RAS) has been identified as a solution to the limitations of both the hierarchical public sector extension system and market-driven private sector extension systems. POs can make a positive contribution by articulating the demands and needs of their members for RAS, and directly or indirectly ensuring that these services are supplied in an efficient and sustainable way. However, not all POs have the required capacities to carry out all these functions. Depending on their aims, resources, vision, or institutional environment, POs have a wide diversity of RAS roles. This note gives an overview of these diverse roles, while presenting the conditions under which they can contribute to accessible and sustainable RAS for smallholder farmers.

### Box 1. What is a producer organisation?

A producer organisation (PO) is defined as a formal (registered under national legislation) or informal (unregistered) institution for collective action. Its members are rural dwellers that get part, or all, of their livelihood from agriculture (crops, livestock, fisheries, and/or other rural activities). Services provided by the PO aim to improve the livelihoods of its members, and include access to advice, information, markets, inputs, and advocacy.

Source: adapted from Rondot and Collion (2001)<sup>1</sup>

## Philosophy and principles

Bearing in mind the key issues for RAS to be effective listed in Box 2, POs are particularly well-placed to be major actors in RAS thanks to their specific human and social capital and their practical knowledge, which give them comparative advantages over other service providers. These include:<sup>2</sup>

- knowledge of producers' needs, demands, and contexts
- trust of their members, providing legitimacy for their work
- capacity and space to encourage farmers' learning and testing of innovations
- scope for linking producers to other actors in the agricultural system
- experience in activities that complement RAS, especially in financial services and advocacy on rural issues.

## Diversity of roles in RAS and capacity requirements

Table 1 summarises the many different ways POs contribute to providing RAS. Depending on their level of involvement in the implementation of services with their members in the

### Box 2. Key factors for effective RAS

For RAS to be effective, three key issues have to be taken into consideration:

- **Pluralism and coordination:** Coordination among the various suppliers of RAS is key for successful implementation and to avoid overlapping provision of services and unnecessary competition.
- **Demand-driven services:** In order to face multiple challenges regarding environmental, economic, or social issues, each farmer needs a specific mix of support services, such as accessing knowledge, technologies, or credit. Demand-driven services ensure that services meet the expressed needs of farmers so that effective changes in their livelihoods occur.
- **Knowledge-oriented services:** Knowledge is increasingly considered a key resource for rural development. Farmers have to continuously evolve, successfully solve new and complex problems, and respond to external expectations and development opportunities. More attention thus has to be paid to the production and sharing of knowledge for, with, and between farmers.

1 Rondot, P. and Collion, M.H. 2001. *Agricultural producer organizations: their contribution to rural capacity building and poverty reduction*. Report of a workshop, Washington, DC, 28–30 June 1999. Washington, DC: RDV, World Bank.

2 GFRAS. 2015. *Producer organisations in rural advisory services: evidence and experiences*. Position Paper. Lindau, Switzerland: GFRAS.

**Table 1. Roles played by POs in RAS and main capacity requirements**

Role	Capacity requirements
<b>Direct implementation</b> <ul style="list-style-type: none"> <li>• Providing direct RAS to members. Implementing and controlling their own services</li> </ul>	<ul style="list-style-type: none"> <li>• Capacities for self-sustainment</li> <li>• Capacity to manage resources (especially funds and advisors)</li> <li>• Capacity to express and address farmers' needs</li> </ul>
<b>Associate</b> <ul style="list-style-type: none"> <li>• Complementing RAS provided by other service providers, through partnership or informal coordination, with economic activities such as input provision, warehousing, and value adding marketing</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to coordinate with other service providers</li> <li>• Capacity to find appropriate funding</li> </ul>
<b>Joint implementation</b> <ul style="list-style-type: none"> <li>• Jointly providing RAS with other value chain stakeholders (e.g. private firm) or with national agencies (state)</li> <li>• Governance, funding, capacity development</li> <li>• Evaluation of RAS is distributed amongst stakeholders, with shared objectives</li> <li>• PO's level of autonomy and responsibility depends on its capacities</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to choose and use appropriate advisory methods and approaches</li> <li>• Capacity to adapt to external requirements and make available suitable and skilled human resources</li> <li>• Capacity to generate results and to account</li> </ul>
<b>Supervisory</b> <ul style="list-style-type: none"> <li>• Defining advisory needs and then contracting out with a service provider</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to contract out, supervise, and assess the services provided and to ensure quality</li> </ul>
<b>Intermediary</b> <ul style="list-style-type: none"> <li>• Creating links and partnerships in the agricultural innovation system, specifically to other RAS providers and research organisations</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to coordinate different organisations and to carry a vision</li> <li>• Capacity to communicate</li> </ul>
<b>Advocacy</b> <ul style="list-style-type: none"> <li>• Participating in advocacy and policy formulation to improve RAS</li> <li>• Ensuring the organisation is recognised as a voice for farmers</li> <li>• This includes mobilising members and seeking partnerships</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to recognise and support charismatic farmer leaders</li> <li>• Capacity to communicate, to carry a vision</li> <li>• Capacity to network, unify, and mobilise other actors in AIS</li> </ul>

field, capacity requirements go from operational skills (capacity to manage human and financial resources, capacity to train advisors or farmer extension workers) to relationship-building or communication skills (capacity to coordinate, to contract out, to network, etc.). Their roles in RAS delivery may be imposed by or negotiated with other stakeholders. For instance, in Burkina Faso, in the cotton sector, farm advice activities are reserved for private firms but they tolerate POs provided that they respect firms' interests. POs with greater autonomy, often those who emerged from grassroots initiatives, are more frequently involved in direct implementation, intermediary, or advocacy roles.

### Funding mechanisms

As part of RAS implementation, POs are also involved in funding mechanisms. Many producers – both individually and through their organisations – contribute towards the cost of the RAS they receive (via the introduction of member fees or levies collected on all services). However, the internal income of POs rarely matches the costs of provision, though the use of farmer-extension workers is one solution used to help save costs.

Generally, RAS are financed through a variety of mechanisms and partnerships. These include public or private sector funding. Embedded services – where the funding and delivery

of RAS are associated with a business transaction in a value chain – are also increasingly common. Advice is linked to the sale of agricultural inputs, with the cost built into the price of the input when it is sold, or to the procurement of agricultural products by a processor or trader.

Some POs complain about a lack of strategy and consistency in building their RAS because of different donors wanting different approaches. This makes attempting, at least partially, to self-finance their mechanisms became a priority. POs have varying positions on this principle. Some POs consider RAS to be inherently public and therefore feel they should be funded by public resources. Others accept the idea of contributions by POs (either via sectors or directly by the POs), but not by individuals.

### Governance and policy environment

An encouraging policy environment and an enabling regulatory environment drive success. Several countries express, via their declared policies, their desire to share control over RAS with POs, either through joint agencies (relatively autonomous and collegial structures, representing both the state and non-state actors), as in Niger or Guinea, or through a scheme of progressive delegation by the state to POs, as in Benin and Burkina Faso. Recognising the need to further adapt

RAS to producer needs, policy-makers often emphasise that control should be demand-driven. The control of RAS also raises the issue of the accreditation of service providers and quality control of services.

### Strengths and challenges for POs involved in RAS (adapted from GFRAS, 2015)<sup>3</sup>

#### Demand side: developing demand-driven services

Strengths:

- Capacity to identify and synthesise needs and solutions for farmers.
- Capacity to participate in agricultural policy processes that contribute to the monitoring and evaluation of RAS.
- Willingness to be self-sustaining and efforts for gradual development.

Challenges:

- Involving members in the production and marketing of a commodity.
- Promoting better understanding among farmers of the role of POs in demand-driven RAS.
- Developing appropriate data collection systems for producers' contexts, and capacities to contribute to learning within producer groups.
- Reinforcing social capital within and between communities in order to avoid superficial participation of members.
- Ensuring honest and efficient leadership.
- Developing capacity to respond to partners other than their members.

#### Supply side: providing RAS

Strengths:

- Flexibility to engage with various actors (nongovernmental organisations (NGOs), value chain actors, etc.).
- Ability to facilitate peer learning between members and organisations.
- Capacity to stimulate the provision of unconditional, unbiased advice with impact on members' livelihoods.
- Cost-effective as can mobilise farmer-extension workers and usually involved in technical topics that do not require a high level of qualification and training.
- Homogeneity of client group means they have shared objectives and needs.
- Good conditions for diffusion of new techniques (organised networks of farmers that facilitate diffusion).

Challenges:

- Developing structures such as constitutions, manuals of procedure, and strategic plans in order to build accountability.

- Ensuring transparent information provision about the actions of the leaders of POs.
- Building poor people's capacity to challenge exclusion, especially through the promotion of their rights regarding information and knowledge provision.
- Strengthening PO capacities for good governance, organisational management, and federal-level coordination.
- Intensifying partnerships with other actors in the agricultural innovation system.

### Best-fit recommendations

POs should take the following issues into consideration when identifying suitable roles that they can play in pluralistic advisory systems, and to target services that they could facilitate or provide in an efficient manner:

- **Their stage of development:** Some POs are still at early stages of development, with very limited activities, such as storage of agricultural products of their members. Such POs should not engage in more than one or two services to their members. Others are at advanced stages with capacity to govern several services without compromising quality, efficiency, or reliability.
- **Their own capacity development issues:** POs should integrate the roles they wish to play in RAS into their strategic plans, to ensure that they have the capacity to offer all the services they want to and the finances to do so. It is counter-productive and damaging to the PO to offer too many services, provided badly due to lack of technical or financial capacity.
- **Encouraging a demand-led approach:** Successfully organising and clustering individual needs, and transforming them into collective and well-articulated demands requires capacities that range from listening, analysis, and facilitation to brokering and negotiation.
- **Adapting existing RAS.** POs should be involved in the design of innovative advisory methods, such as approaches to management advice.<sup>4</sup> For example, in Burkina Faso, "warrantage" systems<sup>5</sup> have been tested and adapted with POs in order to make them more suitable. POs should customise their own advisory services, by combining existing methods or co-designing new approaches with research partners. Testing or adapting new approaches also has positive impacts on POs' capacity development (e.g. increased autonomy and improved efficiency in each specific local situation).

### Evidence of impact

RAS provided by POs facilitate changes at four levels:

- **At the farm level:** Much evidence worldwide shows how POs contribute to alleviating poverty and professionalise

<sup>3</sup> Ibid.

<sup>4</sup> Faure, G., Pautrizel, L., de Romémont, A., Toillier, A., Odru, M. and Havard, M. 2015. *Management advice for family farms to strengthen entrepreneurial skills*. Note 8. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland.

<sup>5</sup> In the warrantage system, farmer groups receive post-harvest credit in exchange for storing their grain.

and empower farmers through the services they provide.<sup>6,7</sup>

- **At the producer organisation level:** Provision of RAS contributes to improved know-how, skills, and strategies of PO leaders and managers.<sup>8</sup>
- **At the regional level:** POs enable interaction and create synergies between existing networks in order to facilitate exchanges of knowledge and experience; they contribute to building local collective capacities and support innovation processes.<sup>9</sup>
- **Within value chains:** In many countries, POs play an essential role in the development of new agricultural products (such as cotton in Burkina Faso) or in the introduction of new models of production (such as organic agriculture). Their fieldwork, based on information gathering and training of thousands of producers, acts as a true driver of development.<sup>10,11</sup>

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## Further reading

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 12, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by CIRAD and FEPA-B, with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

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# Section II

## **Capacity and management**



# Professionalisation of rural advisory services

Stephanus Terblanche and Hlamalani Ngwenya

## Introduction

Businesses and other institutions around the world are increasingly using the term 'professionalism' to describe their level of service provision. While some professions, such as medicine and engineering, have been well known and recognised through standard qualifications for many years, others – such as rural advisory services (RAS) – have only recently begun to aspire to a higher level of professionalism. The benefit of professionalised practices is evident for both practitioners and those who receive services. Many professional regulatory bodies exist that provide checks and balances on the performance standards of different sectors. While there are pockets of evidence on the professionalisation of RAS, the majority of countries are at the stage of seeking to professionalise their services, and need strengthened capacity to initiate this process.

Using the GFRAS scoping study on professionalisation of RAS (Terblanche 2017) as an entry point,<sup>1</sup> this note shares concrete examples of successful cases of professionalisation of RAS, highlighting what is needed to professionalise RAS, what capacities are required at what level, and what preconditions need to be in place.

## Philosophy and principles

This section considers the terminology used in the professionalisation discourse (see Box 1). **Ethics** is concerned with encouraging actions known to be correct by considering all relevant sides of an ethical problem, considering basic ethical values, and acting within the codes of a profession. A **professional** is a person expected to have a special set of skills in a given field, acquired through formal education, experiential learning, and practice, and accompanied by qualifications or accreditation of some kind. **Professionalism** is related to expectations or standards, behaviour, values, and image in the workplace.

## Implementation

### What do we need to professionalise RAS?

Some basic requirements need to be in place in order to professionalise RAS. These are fundamental and common

### Box 1. Definitions

**Ethics:** "A code of conduct or set of beliefs that dictate what is right, wrong, fair, and unfair."<sup>2</sup>

**Profession:** "The occupation which one professes to be skilled in and to follow. A vocation in which professed knowledge of some branch of learning is used in its application to the affairs of others, or in the practice of an art based upon it."<sup>3</sup>

**Professional:** "Person formally certified by a professional body or belonging to a specific profession by virtue of having completed a required course of studies and/or practice. And whose competence can usually be measured against an established set of standards."<sup>4</sup>

**Professionalism in the workplace:** "A specific style of behaviour; Values and professional roles; Exhibited in our behaviour; Respect for self and for others; Know-how; Mature responsibility; Problem solving perseverance."<sup>5</sup>

to all countries and regions where RAS is a profession. They include legal bodies/structures responsible for managing the professionalisation of RAS, and applicable by-laws and standards that can be communicated and enforced.

### Legal bodies and industry structures

There is a need for a specific legal body/entity or industry structure that is responsible for the professionalisation of extension and RAS. Depending on the country and region, these bodies or structures are hosted by different institutions, and may be governed by legal regulations. In some cases, these legal bodies may also regulate other agriculture-related professions, and may work closely with agricultural extension-related professional associations. Box 2 presents some examples.

Other countries – including Argentina, Australia, Republic of Ireland, the Philippines, and Switzerland – are also moving towards a professionalised RAS with legal coordinating bodies. In European Union (EU) countries generally, implementation

1 Terblanche, S.F. 2017. *Advancing agricultural knowledge: Improving the professionalism of rural advisory services*. Lindau, Switzerland: GFRAS. <http://www.g-fras.org/en/knowledge/gfras-publications.html>

2 My Accounting Course: Ethics, <http://www.myaccountingcourse.com/accounting-dictionary/ethics>

3 Oxford English Dictionary online: Profession <http://www.oed.com>

4 BusinessDictionary: Professional, <http://www.businessdictionary.com/definition/professional.html>

5 Shelvy, L., Campbell, M.S. and Taylor, D.D. 2014. Professionalism in the workplace. Presented at Starr Symposium, 15 October, University of Missouri-Kansas City. [http://www.umkc.edu/starr/Workplace\\_Professionalism.pdf](http://www.umkc.edu/starr/Workplace_Professionalism.pdf)

of the Farm Advisory System<sup>6</sup> requires national or regional training and registration systems for advisors who support farmers engaging with the Common Agricultural Policy.

### By-laws

These are rules and regulations that govern the internal affairs of a corporation or society. The following by-laws are commonly applicable to the professionalisation of RAS. They are presented in order of priority as defined in the GFRAS scoping study:<sup>7</sup>

1. code of ethics/conduct
2. field of practice
3. continuing professional development (CPD)
4. standards of practice
5. disciplinary mechanisms.

Continuing professional development is an internationally recognised tool used by professionals to maintain and enhance their knowledge and skills. It is an essential part of supporting professionals in their current roles and career progression.

### Capacities required

Competency can be defined as “a set of observable performance dimensions, including individual knowledge, skills, attitudes, and behaviours, as well as collective team, process, and organisational capabilities, that are linked to high performance, and provide the organisation with sustainable competitive advantages” (Athey and Orth 1999: 216).<sup>8</sup>

Many organisations and/or programmes define the priority competencies that they require of extension professionals.<sup>9</sup> Publications detailing extension and rural advisory competencies include Stone and Coppennoll (2004) and Suvedi and Kaplowitz (2016).<sup>10</sup>

Frequently identified essential competencies for RAS include:

- communication
- facilitation skills
- technical skills (e.g. animal production, plant production)
- sociocultural aspects/behavioural change (e.g. diversity, pluralism, multiculturalism)
- leadership development/group functioning
- extension research, education, and training
- agricultural entrepreneurship and value chains

### Box 2. Examples of legal bodies and industry structures

**SIA in Canada:** The Saskatchewan Institute of Agrologists<sup>11</sup> is an organisation of university-trained professionals that protects the public by ensuring its members are qualified and competent to provide advice on agriculture and related areas. In Saskatchewan, the profession of agrology is regulated by provincial legislation (Agrologist Act 1994). This gives the Institute authority to make regular administrative by-laws concerning membership, code of ethics, meetings, continuing professional development (CPD), standards of practice, and discipline.

**EUFRAS in Europe:** The European Forum for Agricultural and Rural Advisory Services has adopted the Certificate for European Consultants in Rural Areas (CECRA).<sup>12</sup> This is a voluntary industry-certified training programme (thus far), aimed at improving the professional skills of rural advisors and consultants in the areas of extension methodology, communication, and influencing people. In Europe approximately ten countries have already adopted CECRA in their national language.

**SACNASP in South Africa:** The South African Council for Natural Scientific Professions works in collaboration with the South African Society for Agricultural Extension (SASAE)<sup>13</sup> to ensure that extension advisers in South Africa register with the Council according to the Natural Scientific Professions Act 2003. As per Schedule 1 of the Act, no one may practise in any of 23 listed fields unless they are registered in a category of the schedule.

**NAEPSDP in the USA:** The National Association of Extension Program & Staff Development Professionals<sup>14</sup> provides an organised forum enabling professionals who are actively engaged in, or have a strong commitment to, programme and staff development in the cooperative extension system to come together, both physically and virtually.

- extension programme and project management
- extension tools and methods
- extension programme monitoring and evaluation
- information and communications technologies
- extension and organisational management.

For an example of competency rankings, see Box 3.

6 [https://ec.europa.eu/agriculture/direct-support/cross-compliance/farm-advisory-system\\_en](https://ec.europa.eu/agriculture/direct-support/cross-compliance/farm-advisory-system_en)

7 Terblanche 2017. Op. cit.

8 Athey, T.R. and Orth, M.S. 1999. Emerging competency methods for the future. *Human Resource Management* 38(3): 215–226. [http://timatheypd.com/wp-content/uploads/2014/08/EmergingCompetencyMethodsForTheFuture\\_TAtheyPhD.pdf](http://timatheypd.com/wp-content/uploads/2014/08/EmergingCompetencyMethodsForTheFuture_TAtheyPhD.pdf)

9 Examples include: GFRAS, <http://www.g-fras.org/en/652-the-new-extensionist-core-competencies-for-individuals.html>; University of Florida: Brodeur, C.W., Higgins, C., Galindo-Gonzalez, S., Craig, D.D. and Haile, T. 2011. Designing a competency-based new county extension personnel training program: A novel approach. *Journal of Extension* 49(3). <http://www.joe.org/joe/2011june/a2.php>; University of Nebraska-Lincoln. 2005. *Competencies for 21st century extension professionals*. Lincoln, NE: University of Nebraska-Lincoln.

10 Stone, B. and Coppennoll, S. 2004. You, extension, and success: A competency-based professional development system. *Journal of Extension* 42(2).

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11 <http://www.sia.sk.ca>

12 EUFRAS-CECRA, originally developed by the International Academy of Rural Advisors (IALB): <http://www.eufas.eu/index.php/activities/cecra>

13 SACNASP: <http://www.sacnasp.co.za>; SASAE: <http://www.sasae.co.za>

14 <https://naepsdp.org>

### Box 3. New Extensionist Learning Kit – competency ranking

In the GFRAS professionalisation of RAS scoping study, respondents were asked to rate the competencies included in the GFRAS New Extensionist Learning Kit<sup>15</sup> using the following scale: 1 = absolutely essential; 2 = essential; 3 = somewhat essential; 4 = not essential at all; 5 = don't know. The results were as follows.

#### Absolutely essential

- Communication for innovation
- Extension approaches and tools (changing role of extension in innovation and development)
- Adult learning and behaviour change
- Facilitation for development

#### Essential

- Agricultural entrepreneurship
- Extension programme management
- Professional ethics
- Gender and youth issues in agricultural extension and rural development
- Adaptation to change
- Value chain development
- Introduction to the New Extensionist

#### Somewhat essential

- Community development (mobilisation)
- Farmer institutional development

## Costs

It is generally expected that individuals pay a small registration fee according to the level of registration. This may be embedded in the cost of approved training, or the professional person may pay an annual registration fee embedded in a membership fee. The administrative function, staff, and offices of the registration/certification body need to be remunerated from fees.

In the case of South Africa, for example, the annual registration fees in 2017 were as follows:<sup>16</sup>

#### SACNASP

- Professional Natural Scientist (Prof. Nat. Sci.): ZAR1210
- Candidate Natural Scientist (Cand. Nat. Sci.): ZAR460
- Certificated Natural Scientist (Cert. Nat. Sci.): ZAR740

#### SASAE

- A single fee: ZAR360.

## Strengths and weaknesses

The following strengths and weaknesses are perceptions of the professionalisation of RAS scoping study respondents.

### Strengths of professionalising

- Setting high standards to improve performance and deliver relevant services.
- Job satisfaction (pride, recognition, practising without fear/interference, remuneration/awards, support from colleagues).

### Weaknesses of professionalising

- Disconnection from reality, advisors' work too theoretical.
- Work environment becomes discouraging, administrative burden, inability to practise with confidence.
- Poor fit with diverse work and business environment of advisors, better suited to larger groups and service providers.
- Cost to beneficiaries (who are expected to pay for services rendered).

### Best-fit considerations

When defining the preconditions for professionalisation of RAS, it is important to define the levels of professional membership and registration. There are no standard regulations on these, but each country needs to define these levels taking the specific context into consideration. The minimum qualifications required for extension and RAS professionalisation will differ. In South Africa, for example, the extension landscape recognises different levels of professional registration in agriculture (as a natural scientist) and in extension (as a professional extension scientist). These levels are necessary to redress the imbalances of the past: during apartheid, the majority of extensionists in South Africa were only able to enrol for a diploma qualification.

Some examples of membership levels in professionalised RAS of different countries are presented in Table 1.

### Governance

The GFRAS scoping study shows that a specific legal body or structure specifically responsible for establishing and upholding professional standards, including respective by-laws, is crucial for RAS to follow the path towards professionalism in a specific country. Depending on the country and region, this legal body or structure could be a government, private sector, learning, or nongovernmental organisation or institution that is legitimate and recognised. The responsibility should include defining the minimum standard, levels of registration, code of ethics and by-laws, and CPD, among others. The roles of the regional RAS networks and country fora as pluralistic and multi-stakeholder platforms need to be considered as they can provide a neutral, unbiased platform for discussion and exchange. Ideally, the legal body or structure should collaborate very closely with country fora or regional networks.

<sup>15</sup> <http://www.g-fras.org/en/knowledge/new-extensionist-learning-kit-nelk.html>

<sup>16</sup> SACNASP: <http://www.sacnasp.org.za>; SASAE: <http://www.sasae.co.za>

**Table 1. Examples of membership levels in professionalised RAS**

Category	Membership level				
	1	2	3	4	5
Australia	Ordinary member	Student member	Retired professional	Life member	Corporate member
Ireland	Teagasc (all staff with degrees)	Private consultant associations (all with degrees)	Other advisors (some with degrees)		
Philippines	Individual member	Institutional members			
South Africa	Natural science: Prof. Nat. Sci.	Cand. Nat. Sci.	Cert. Nat. Sci.		
	Extension science: Prof. Ext. Sci.	Cand. Ext. Sci.	Cert. Ext. Tech. Level A/B	Cand. Ext. Tech. Level A/B	Assoc. Ext. Tech.
USA	Active member	Life member	Student member		

### Evidence of impacts, sustainability, and scalability

The move towards professionalism of RAS and related standard qualifications has only recently begun to gain momentum, although the need has been stated in the literature since 2005. At the time of the GFRAS scoping study, 37 countries (the majority of which are in the EU) had professionalised RAS; 15 countries were in the process of professionalisation; and 21 aspired to become more professional. This signifies a strong need and demand for RAS to attain a professional level similar to that of other agricultural disciplines. In the case of South Africa, professionalisation of RAS has provided space to negotiate minimum wages as well as incentives for CPD, as it is required to maintain professional status. Countries that are in the process of professionalisation can draw lessons from these experiences.

### Further reading

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This content was originally published in August 2017 as GFRAS Global Good Practice Note 27, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was compiled by Stephanus Terblanche of the University of Pretoria, and Hlamalani Ngwenya of the University of Free State and an International Development Consultant, with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# Rural advisory services curriculum development

Hlamalani Ngwenya and Mercy Oluwayemisi Akeredolu

## Introduction

The landscape of agricultural development has changed dramatically in the past two decades, calling for transformation of the curricula of programmes, courses, and training related to agricultural extension and rural advisory services (RAS) in terms of what is taught, and how. Many higher learning institutions and training providers recognise the need to review and change their existing curricula and/or to develop new ones that are responsive to current market demands. However, there is often limited know-how and capacity to implement successful processes of curriculum development, especially in the extension and RAS community.

This note describes a structured process of curriculum development in the context of extension and RAS. The experience of the Global Forum for Rural Advisory Services (GFRAS) in developing the New Extensionist Learning Kit<sup>1</sup> is presented as an example of this process at global level. Other cases are used to bring out the national-level experience consolidating the lessons learned.

## Philosophy and principles

Philosophy provides a framework for decision-making and organising the curriculum development process. It is about asking questions around the purpose of learning, how the students learn, what methods and materials to use, and the process of teaching and learning, among other issues.

Although traditionally many curricula have been predominantly technical, today there is a call for the integration of technical and functional skills.

- **Technical skills** – also known as hard skills – are associated with the abilities and knowledge needed to perform specific tasks. They are practical and often relate to mechanical, information technology, mathematical, or scientific tasks.
- **Functional skills** – also known as soft skills – comprise a broad category of personal attributes and interpersonal skills that enable us to interact with others. Functional skills can be related to self-management in the sense of helping an individual manage their own emotions, perceptions, and reactions. They may also include the people skills required to interact with others in a given field or workplace. Functional

or soft skills are cross-cutting as they are relevant across different fields and sectors.

In the 21st century, the RAS curriculum should be influenced by contemporary and progressive philosophies that emphasise the integration of functional skills to address more complex issues of a social nature (Box 1).

## What is a curriculum?

“In a theoretical sense, curriculum refers to what is offered by the school or college. However, practically it has a wider scope, which covers the knowledge, attitude, behaviour, manner, performance, and skills that are imparted or inculcated in a student. It contains the teaching methods, lessons, assignments, physical and mental exercises, activities, projects, study material, tutorials, presentations, assessments, test series, learning objectives, and so on.”<sup>2</sup>

A **curriculum** is broader than a course and a syllabus. It is an aggregation of courses and provides a bigger picture. A **course** is a set of lectures that can consist of any type of content. Different courses contribute to a curriculum. A **syllabus** is a descriptive outline and summary of topics to be covered in an

### Box 1. Philosophical considerations

**Intellectual emphasis:** Not training and disciplining the mind, but rather engaging learners in problem-solving activities, unleashing creativity and thinking outside the box.

**Educational process:** Should be viewed not as rigid instruction, but as a creative self-learning process where learners reconstruct knowledge. Education should be learner-centred.

**Curriculum content:** Should address learners holistically in relation to knowledge, attitude, and skills.

**Learners:** Are not homogeneous empty vessels, but a heterogeneous group able to think and relate issues to their own real-life experience.

**Teachers:** Are not subject authorities, but facilitate learning and create space for students to learn on their own. Teacher–student dialogue is important.

1 [www.g-fras.org/en/157-the-new-extensionist](http://www.g-fras.org/en/157-the-new-extensionist)

2 Surbhi, S. 2015. Difference between syllabus and curriculum: Comparison chart. Key Differences. <http://keydifferences.com/difference-between-syllabus-and-curriculum.html#ComparisonChart>

educational or training course.<sup>3</sup> It helps students to know about a subject in detail, why it is a part of their course of study, and what will be expected from them. It contains general rules, policies, instructions, topics covered, assignments, projects, test dates, and so on. A subject syllabus is a unit of the curriculum.

**Curriculum development** can therefore be understood as a systematic process of framing the context within which learning takes place; what needs to be taught and learned (content); how it should be delivered (teaching–learning methods and tools); how it is assessed (examinations); and what resources may be used (materials to deliver and support teaching and learning). It is an interactive and cyclical process that involves a considerable amount of negotiation among stakeholders with different interests to reach a consensus on what defines a complete curriculum.

### How, who, what, why?

The principles important in determining the choice of emphasis in curriculum development are:

- know how – process or practical knowledge
- know who – communication
- know what – facts
- know why – science.

Understanding these principles will help to influence choices about what content needs to be taught, how it is delivered, and how it is assessed.

### Modes of delivery influencing curriculum development

The delivery mode is important to curriculum development because it will influence the writing style, packaging format, and nature of activities.

- **Face-to-face** courses usually involve the instructor and learner being in the same room.
- **Self-directed** study involves the learner facilitating their own learning, for example through web-based online courses or long-distance learning.
- **Blended courses** (also known as hybrid or mixed-mode courses) combine traditional face-to-face instruction with long-distance or web-based learning. Blended learning is a student-centred approach to creating a learning experience whereby the learner interacts with other students, with the instructor, and with the course content through thoughtful integration of online and face-to-face environments.

### Implementation

Curriculum development generally follows an iterative process involving a wide range of stakeholders, negotiation of interest, and reaching consensus on the content and process. Common steps include the following.

- **Situation analysis:** Review existing curricula, national standards, market research, needs assessments, and

stakeholder mapping in the context of curriculum development.

- **Curriculum planning:** Define the required core competencies to be addressed by the curriculum; define intended goals, objectives, and target audience; determine curriculum content, themes to be covered, and overall process to be followed; develop a teaching and learning approach and assessment strategy.
- **Selection of learning mode and delivery system:** Determine the mode of delivery of the curriculum.
- **Content generation:** Determine the mode of production of the material (e.g. writeshops, engaging experts). Generate structured sets of learning objectives and outcomes. Organise, structure, or sequence the content and/or learning experience. Determine what to assess/evaluate and the assessment criteria.
- **Establishment of a curriculum library:** Collate resource materials for use during the curriculum development process and as reference materials for learners. Resource materials could include publications, articles, videos, and links to online material.
- **Technical writing, editing, and quality assurance:** Determine whether content production will be best done by content experts, or by professional writers who have some understanding of the issues at hand.
- **Testing, piloting, and validation:** Test for feedback and validation before finalising the curriculum.
- **Accreditation, registration, and approval:** Consult the relevant institution. Many countries have bodies that oversee accreditation of curricula and training programmes (e.g. the National University Commission in Nigeria).

Boxes 2 and 3 present two examples of implementing curriculum development processes.

### Capacities required

The success of any curriculum development process is anchored in coordination of the different activities leading to the final products. This requires the ability to identify experts, manage the participation of different stakeholders in the various stages of the process, and keep up the momentum. When organising writeshops, facilitation capacity becomes crucial in guiding the discussions and leading the process towards a common goal. A facilitator needs to understand the curriculum development process and to guide the writers.

The quality of any curriculum stands or falls with the content specialists. There is a need to identify relevant content experts/specialists who are not only competent in the subject matter, but also up to date with emerging trends. Content experts are not necessarily experts in technical writing. Technical writers are responsible for writing, layout, editing, and quality assurance of the final products. This may also be done by

<sup>3</sup> Anon. 2017. Difference between syllabus and curriculum. Difference Between: Descriptive Analysis and Comparisons. <http://www.differencebetween.info/difference-between-syllabus-and-curriculum>

## Box 2. Development of the New Extensionist Learning Kit – South Africa

**Situation analysis:** GFRAS developed a document detailing the role extension plays in agricultural innovation systems, and the strategies and capacities needed at individual, organisational, and system levels.<sup>4</sup> Engaging different experts within the network, GFRAS reviewed existing curricula in a number of institutions worldwide.

**Identification of core competencies:** Through a consultative process with a wide range of stakeholders, the GFRAS Consortium came up with a set of 13 core competencies for individuals from around the world to fulfil the role of the New Extensionist.<sup>5</sup> GFRAS embarked on the process of developing learning materials for the core competencies defined. These make up the New Extensionist Learning Kit.

**Content generation:** GFRAS convened two writeshops in 2015 and 2016 with 20 content specialists to develop learning modules of the New Extensionist Learning Kit. Bringing the content experts under one roof was crucial for a collective

understanding of the bigger picture, ensuring cross-referencing across the different modules. The content experts generated the outlines, learning outcomes, and content for each of the modules, and collated relevant resource materials to build up a curriculum library. An experienced publishing company was contracted to write the modules as well as for the design, layout, and editing of the module, working closely with content specialists for feedback and quality assurance.

**Testing and interface with people on the ground:** Once the module drafts were completed, there was a need to test and solicit feedback from people on the ground. This included reviews of the module outlines, testing the modules, and feedback on both content and process. The testing was done by individuals and groups through face-to-face workshops and/or long-distance self-directed learning. Different actors across the GFRAS global network were involved in testing and validating the different modules.

## Box 3. Accreditation and registration of an academic curriculum – South Africa<sup>6</sup>

### Application for programme accreditation (candidacy phase)

In South Africa, institutions wishing to offer new academic programmes are required to submit an application for accreditation to the Higher Education Qualification Council (HEQC).

The programme accreditation application is evaluated against the criteria for programme input: programme design, student recruitment and selection, staffing, teaching and learning strategy, assessment policies and procedures, infrastructure, library and resources, and administrative services.

The institution submits a plan for implementation of the programme. This plan should specify implementation steps for the new programme, including time frames and budgetary allocations, human resources for managing implementation, and the required infrastructure. Institutional strategies are needed to ensure the HEQC's criteria for programme progress, outputs and impact, and review are met in the accreditation phase of the new programme.<sup>7</sup>

An HEQC panel of peers evaluates applications for new programmes. They may also undertake a site visit if necessary. If the requirements for candidacy status are met, the HEQC will award provisional accreditation to the new programme.

### Mid-term progress report

Mid-way through the programme, the institution submits a progress report for evaluation by the HEQC.

### Accreditation phase

Within one year of the first cohort of students graduating from a new programme, the institution submits an application to the HEQC for accreditation. The institution must demonstrate that it has met the conditions set by the HEQC during the candidacy phase, which include conditions relating to evaluation of the mid-term report from the institution. The institution is also required to conduct a self-evaluation of the programme using the HEQC's criteria for the accreditation phase, which include those for programme input, process, output and impact, and review.

If the submission is approved by the HEQC, the programme gains accreditation status.<sup>8</sup>

education or learning experts who know how to structure the text in an appropriate format with activities that people can learn from.

A wide range of stakeholders need to be involved in testing the modules before finalisation. The more diverse

the group, the better, as this brings different perspectives. Gender considerations are also important (see Box 4). The feedback received needs to be incorporated to improve the final product. Accreditation of training programmes requires special expertise, and will differ from country to country.

4 Sulaiman, R. and Davis, K. 2012. The 'New Extensionist': Roles, strategies, and capacities to strengthen extension and advisory services. GFRAS Position Paper. Lindau, Switzerland: GFRAS. <http://www.g-fras.org/en/activities/the-new-extensionist.html>

5 Davis (2015) Op. cit.

6 For further information on the accreditation and registration process in South Africa, contact Nalize Scheepers at Pedagogix (<http://www.pedagogix.co.za>)

7 CHE. 2004. *Criteria for programme accreditation*. Pretoria: Council on Higher Education, Higher Education Quality Committee. [http://www.che.ac.za/sites/default/files/publications/CHE\\_accreditation\\_criteria\\_Nov2004\\_0.pdf](http://www.che.ac.za/sites/default/files/publications/CHE_accreditation_criteria_Nov2004_0.pdf)

8 For more information contact the South African Qualification Authority: <http://www.sqa.org.za/list.php?e=Guidelines>

#### Box 4. Gender considerations

Gender sensitivity is important in curriculum development. Learning should be suitable for both male and female learners, and the skills emphasised should draw attention to gender disparities, stereotypes, and other constraints experienced in the field. When selecting experts for curriculum/content development, gender balance should also be considered in order to gain a balanced perspective.

#### Costs

Curriculum development requires different types of expertise throughout the process from situation analysis to final product. The different stages require not only human resources, but also financial inputs. These will depend on the level (national or local), scope (number of courses to be developed, mode of delivery), and activities (writeshops, technical writing, testing, monitoring and evaluation).

The GFRAS New Extensionist Learning Kit, with 13 modules, was developed at the global level, and the activities incurring costs included: situational analysis, stakeholder workshop, writeshops, technical writing, and testing. The actual writing, typesetting, and editing is estimated to cost US\$2,000–5,000 per module.

#### Strengths and weaknesses

Different options for curriculum development each have their own strengths and weaknesses. Finding a good mix of options while maintaining maximum quality is important. For example, omitting market analysis or testing due to cost-cutting runs the risk of producing irrelevant material. It is important to understand the environment and determine what make sense for that context.

#### Best-fit considerations

Developing a curriculum at the global level has the highest potential to reach large-scale audiences, but runs the risk of not being specific enough. The legitimacy of the institution leading the curriculum development process is crucial for credibility and the quick adoption of the process and products.

Global-level curricula require more advocacy effort, without which trickling down to local level could be a challenge. Global-level products also require translation into different languages, and further development to suit local contexts, all of which will require additional resources. At the national level, an enabling policy environment and allocation of resources are crucial for effective curriculum development.

#### Governance

Coordination of the curriculum development process is crucial. In the GFRAS case, coordination at global level entailed managing participation of context specialists and technical writers, organising writeshops, facilitating testing workshops, and monitoring and evaluating the process.

At the national level, coordination follows similar processes. Monitoring and evaluation is very important to keep track of inputs and outputs at various stages of the process. As in the South African case (Box 3), an accreditation system as well as universities and national regulatory systems play a critical role in governance and quality assurance.

#### Evidence of impact, sustainability, and scalability

There is evidence of increasing demand for online training programmes for RAS. The Food and Agriculture Organization of the United Nations has a long history of using online learning materials for agricultural extension.<sup>9</sup> In India, the National Institute of Agricultural Extension Management (MANAGE) implements a postgraduate diploma in agricultural extension management (PGDAEM) using massive open online courses (MOOCs);<sup>10</sup> and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) offers MOOCs through the National Virtual Academy for Indian Agriculture.<sup>11</sup>

Demand for the New Extensionist Learning Kit is growing, from GFRAS network partners and beyond. Between June 2015 and May 2017 over 2,000 people were exposed to the kit through testing and/or training, and the feedback received is encouraging. Some universities have adopted some of the modules for integration into existing programmes e.g. in South Africa, Sierra Leone, and the Philippines.

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This content was originally published in August 2017 as GFRAS Global Good Practice Note 28, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

9 Oakley, P. and Garforth, C. 1997. *Guide to extension training*, 5th ed. Rome: Food And Agriculture Organization of the United Nations, ch. 2. <http://www.fao.org/docrep/t0060e/t0060e03.htm>

10 MANAGE Post Graduate Diploma in Agricultural Extension Management (PGDAEM). <http://www.manage.gov.in/moocs/prospectus.pdf>

11 ICRISAT. 2014. Massive open online courses for agricultural professionals to usher in classrooms without boundaries. Press release. Patancheru, India: International Crops Research Institute for the Semi-Arid Tropics. <http://www.icrisat.org/newsroom/news-releases/icrisat-pr-2014-media27.htm>

# Rural advisory services for agripreneurship development

Shaun Ferris, Mahesh Chander, and Natalie Ernst

## Introduction

The smallholder farming landscape is rapidly changing owing to current trends that create both challenges and opportunities for rural communities in their efforts to commercialise.

In this fast-changing environment, farmers and their rural advisory service (RAS) providers must learn new skills and find new ways of working together to develop inclusive business models that help link diverse farmers and entrepreneurs to growth markets. One solution to help with rural commercialisation is to support the growing numbers of agripreneurs, who could play a catalytic role in generating new income streams and jobs. Politicians and practitioners as well as scientists have recognised that farmers, processors, and local service providers increasingly require agripreneurship support, in addition to sound management and technical skills, to be sustainable in the future.<sup>1</sup>

## Philosophy and principles

As the focus of RAS (public, private, NGO, and producer organisation) has moved away from technology transfer and towards a more systems-focused approach, several market-oriented strategies have emerged. Along with collective marketing and value chain methods, greater emphasis has been placed on fostering agripreneurship.

The agripreneurship model is of particular interest to younger and more progressive farmers who want to accelerate their business results through specialised commercial support that works to upgrade their business opportunities. This type of support is often not available from traditional extension service providers.

## The changing role of rural advisory services

Working with agripreneurs requires a fundamental shift in the relationship between those providing and those receiving RAS. To be successful, that will mean shifting from a provider–client model to a partnership approach.

Given that agripreneurs have particular needs that depend on the maturity and scale of their business, RAS need to work in partnership with agripreneurs to facilitate links to relevant actors and specialised training agencies in accordance with

## Box 1. What is agripreneurship?

**Agripreneurship** describes the adaptive and dynamic process of business development within the agricultural sector that brings innovation and value addition, accelerates value creation, and provides for sustainable systems that support equitable social impact. Agripreneurship can help rural people be more effective players in value chains, not only raising their livelihood options, but also providing new job opportunities for members of rural communities.

**Agripreneurs** can come from any part of the agricultural value chain – they include farmers, traders, processors, and retailers; also business services such as agro-dealers, production services, equipment services, market information services, and financial service providers that support the value chain.

evolving business needs. RAS effectively play an incubation role for new enterprise ideas, finding the right local expertise to help accelerate business growth, and developing networks that can provide longer-term mentoring to agripreneurs to help sustain their emerging business ventures. This transition from trainer to facilitator means that RAS need to reskill and reconfigure their roles in order to help agripreneurs.

## Implementation

There are several ways in which RAS can begin to engage and advise agripreneurs.

- **Awareness building:** A first step for RAS agencies is to hold learning events with their staff and potential clients about their role in going beyond traditional training to strengthening agripreneurship.
- **Learning alliances:** These are innovation platforms for both service providers and agripreneurs in target value chains to support innovation, adaptive research, and learning. For example, in Central America and Africa the Centre for Tropical Agriculture has led several agro-enterprise learning alliances with NGOs, research organisations, governments, and private companies.
- **New project designs:** Development projects may be designed to support different types of clients, including farmers and agripreneurs. For instance, in Nicaragua, Catholic Relief Services designed a project where half the funds

<sup>1</sup> McElwee, G. 2008. A taxonomy of entrepreneurial farmers. *International Journal of Entrepreneurship and Small Business* 6: 465–478; Pyysiäinen, J., Anderson, A., McElwee, G. and Vesala, K. 2005. Developing the entrepreneurial skills of farmers: Some myths explored. *International Journal of Entrepreneurial Behaviour Research* 12 (1): 21–39.

were used in grant form so that RAS could provide technical assistance in training, innovation, and business planning; the other half were assigned to a community investment fund used to help launch agripreneurs to finance their new businesses.

- **Impact investment networks:** Investors hold regular meetings to identify how to support specific sectors, offering opportunities for agripreneurs to discuss ideas with impact investors, and to make pitches that typically combine a combination of grants and investment options. Examples of networks where agripreneurs can meet with investors and leaders of social enterprises to propel entrepreneurship in emerging markets include Social Capital Markets (SOCAP) and Aspen Network for Development Entrepreneurs (ANDE).

Rural advisory services can also provide direct support for agripreneurship, as in the following examples.

- **Agripreneur workshops:** RAS can develop training sessions that work with combinations of agro-enterprise agencies including investors, production experts, and marketing experts.
- **Agripreneur competitions:** RAS organisations can sponsor enterprise competitions, where the best business plans are funded to a specific level, or winners enter into training programmes that help agripreneurs to plan and launch their businesses.
- **Agripreneur incubators:** Capacity-building programmes enable RAS providers to work directly with agripreneurs to help identify new markets, strengthen market access, upgrade value chains, and provide support in management skills. Through these incubators, RAS can help to facilitate and broker business relationships between emerging agripreneurs, and learn from leaders in target business areas (see Box 2 for an example).
- **Agripreneur accelerators:** Short-term booster services work with agripreneurs to fine-tune business models. For example, Santa Clara University in California runs booster courses to help agripreneurs launch new ventures.
- **Agripreneur mentoring/coaching:** Once agripreneurs have launched businesses, these services provide occasional support as required to maintain business focus, competitiveness, and innovation.

## Capacities required

Agripreneurs are not typical clients, nor do they seek traditional training schemes. For RAS to be relevant to this new generation of clients, they need to work with a range of agripreneurs to test combinations of innovation, community development, new finance methods, and business models.

One complication for RAS is operating effectively with a diverse range of rural actors – including producers, processors, traders,

### Box 2. a-IDEA in India

Among several initiatives to foster agripreneurship that are being tested by the Indian Government, the Indian Council of Agricultural Research's National Academy of Agricultural Research Management (ICAR-NAARM) has established the Association for Innovation Development of Entrepreneurship in Agriculture – a-IDEA.<sup>2</sup> This incubation centre helps to identify and develop businesses, provide access to knowledge, and facilitate networking with other support services fostering innovation and entrepreneurship in agriculture.

ICAR-NAARM hosts three initiatives:

- a technology business incubator (a-IDEA)
- an agri-business incubator (NAARM-ABI)
- a grassroots innovations hub (NAARM-GRI).

One successful startup business sells branded A2 protein milk.<sup>3</sup> The agripreneur, a retired airforce officer, is one of a new breed of farmers who combine knowledge, innovation, and business acumen to generate highly profitable agro-enterprise ventures. This agripreneur is now seeking to expand his business into certified organic milk and milk products to reach new consumers in the premium organic market. His business ideas are far ahead of conventional milk producers in the region, and his success is partly thanks to the agribusiness incubation support available from NAARM-ABI.

and agrodealers; women and men; young and old – all with varying needs and gendered roles. First, RAS need to learn how to match clients with the right type of services; then to facilitate specialised training to support their needs. To provide a more inclusive approach to agripreneurship, RAS need skills in defining client types and identifying their needs. Being able to categorise clients using effective diagnostic skills is a critical first step in defining the most useful strategies to support them. Decisions are then needed on what support the RAS itself can offer, and what types of service require more specialised providers. To help identify key client types and services, a classification into four general categories of agripreneurs can be helpful (Table 1).

In supporting agripreneurs, RAS can link them with expert services and specialists such as:

- marketing experts
- production experts
- technology experts
- postharvest management experts
- financial service experts
- value chain experts
- business mentors.

To support agripreneurs, RAS need to be flexible in terms of their roles. In many cases, their main role will be to find

<sup>2</sup> <http://aidea.naarm.org.in>

<sup>3</sup> A2 protein milk is pure cows' milk that naturally contains only the easy-to-digest A2 protein, and is free from A1 protein which some people struggle to digest.

**Table 1. Types of agripreneurs**

Type of actor	Characteristics	Service needs
<b>Commercial smallholder farmers</b>	<ul style="list-style-type: none"> <li>• Seeking to optimise their production and marketing opportunities</li> <li>• Interested in developing businesses that supply higher-value markets</li> <li>• Likely to operate as individuals rather than traditional farmer cooperative models</li> <li>• Includes youth and women farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to use technologies to improve productivity and value</li> <li>• Plans to maximise profits</li> <li>• Ways to rapidly innovate their business and achieve scale</li> <li>• Links with new partners to accelerate their commercial ambitions</li> <li>• Identify and exploit new business areas and financial services</li> </ul>
<b>Commercial farm cooperatives</b>	<ul style="list-style-type: none"> <li>• Focus on helping members to differentiate themselves</li> <li>• Want to capture value from more lucrative formal markets</li> <li>• Prepared to pay for advisory services if they are effective</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade their management skills</li> <li>• Identify more specialised services to access higher-value markets</li> <li>• Refresh and scale their business models</li> <li>• Access new lines of credit</li> </ul>
<b>Processors</b>	<ul style="list-style-type: none"> <li>• Often working higher up the value chain at the aggregation and product transformation level</li> <li>• May combine farm production with value addition</li> <li>• Often work with other farmers to meet their supply needs</li> <li>• Capture value beyond the basic production level</li> </ul>	<ul style="list-style-type: none"> <li>• Diversify their product range to supply higher-value/volume markets</li> <li>• Ability to trace the flow and quality of goods from farmers to factory</li> <li>• Ability to innovate with farmers, technology suppliers, and research</li> <li>• Use technologies to meet food standards</li> </ul>
<b>Business development services (traders, agro-dealers, tractor operators, financial service providers)</b>	<ul style="list-style-type: none"> <li>• Agripreneurs who offer services to the agricultural community</li> <li>• Often work with farmer groups/cooperatives with specialised services</li> <li>• Help with efficiency gains and competitiveness within the value chain</li> </ul>	<ul style="list-style-type: none"> <li>• Pilot new ideas with value chain clients and financial services</li> <li>• Support in innovation</li> <li>• Facilitate links with business mentors</li> <li>• Mentor the business as it matures to support viability and growth</li> </ul>

expertise and enable others to access the right types of knowledge, rather than attempting to provide services themselves. Key skills that extensionists need in addition to basic extension skills include:

- adult learning, gender support, and facilitation methods
- sound understanding of the agricultural innovation system and value chain in which the agripreneur works
- marketing basics and working with value chains
- diagnostic skills and stakeholder management to link agripreneurs with the relevant service providers
- innovation and systems thinking
- business planning and business launching
- financial management and advice on raising capital to meet needs
- running a business and brokering relationships.

Rural advisory services also need to think differently in their service provision – considering combinations of free and fee-based methods to meet the needs and demands of agripreneurs.

### Costs

As part of a market-based facilitation process, RAS can work with agripreneurs at almost no additional cost, as this is more about a shift in mindset and including agripreneurs in the

network of partners. However, as RAS become more involved with agripreneurs, incubation, and accelerators, costs may include the following:

- Capacity-building – to equip existing RAS personnel with the new skills and competencies needed for enterprise development and business facilitation.
- Human resources – hiring new staff to support agripreneurs through networking, coaching, and mentoring.
- Supporting events – including agripreneur workshops, agripreneur competitions, and incubator programmes.

### Strengths and weaknesses

#### Strengths

- Location – RAS work in areas where agripreneurs are located.
- Reach – pluralistic RAS (which may include government, civil society, and private service providers) have the ability to work with large numbers of agripreneurs and different segments, to provide inclusive support.
- Trust – RAS have long-term relationships with the agricultural community.
- Cost effectiveness – RAS can provide support at a cost that is accessible to target clients.

## Weaknesses

- Business skills – the lack of business skills within traditional RAS means that training will be needed.
- Coordination – in the pluralistic context, coordination among the various RAS actors can be weak.
- Inclusiveness – agro-enterprise methods and tools may at times inherently lack inclusiveness for more vulnerable groups that cannot make the investments needed.

## Best-fit considerations

Rural advisory services can best fulfil their role of working with agripreneurs in environments where some coordination and exchange already takes place between actors in the agricultural innovation system. This is particularly the case within the pluralistic RAS landscape. A conducive and supportive business environment, including necessary policies and investments, also helps RAS to strengthen agripreneurship. Of course, RAS should work with agripreneurs based on demand – not only due to the partnership approach, but also because the agripreneurs' own motivation, ownership, and commitment is crucial for success. Working in communities where successful agripreneurs already serve as role models can certainly be an advantage, but is not a hindering factor.

## Governance

No single advisory service, public or private, has all the skills needed by agripreneurs. This new type of client is not passive, and they will require the best advice available from a range of different sources. Success in supporting agripreneurs will therefore come from RAS teams that are able to identify needs, coordinate links between different sources of expertise, and support networking between service providers. This process will require RAS to be agile and flexible in terms of how they help agripreneurs access the right types of services and mentoring, at the right time. The evidence to date shows that this new role will improve RAS policies and support overall RAS pluralism. Innovation platforms can also play an important role in facilitating better coordination among actors, leading to more demand-driven service delivery to farmers and other value chain actors.

## Evidence of impacts, sustainability, and scalability

Recent studies show that agricultural entrepreneurship can have a profound impact on business growth and survival,<sup>4</sup> as success in this area enables the upgrading and acceleration of

competitive agricultural businesses and services. There has also been a dramatic shift in private capital for financing projects in emerging economies, where markets are expected to account for 97% of global population growth by 2030. Many of these new business opportunities will be in the agricultural sector.

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This content was originally published in August 2017 as GFRAS Global Good Practice Note 30, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was compiled by Shaun Ferris of Catholic Relief Services, Mahesh Chander from the Indian Veterinary Research Institute, and Natalie Ernst from GFRAS Secretariat, with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors and do not necessarily reflect those of their respective organisations, or of PIM, IFPRI, or CGIAR.

<sup>4</sup> Lans, T., Verstegen, J. and Mulder, M. 2011. Analyzing, pursuing and networking: A validated three-factor framework for entrepreneurial competence from a small business perspective. *International Small Business Journal* 29 (6): 695–713.

# Management advice for family farms to strengthen entrepreneurial skills

*Guy Faure, Louis Pautrizel, Aurelle de Romémont, Aurélie Toillier, Mariana Odru, and Michel Havard*

## Introduction

In West Africa, during the 1990s, new innovative advisory methods were used that broke with the tradition of top-down public extension focusing on production, and instead helped meet the diversity of producers' needs by using participatory methods. Management Advice for Family Farms (MAFF) is one of these approaches. MAFF has been adapted for diverse contexts and is today implemented by a wide range of actors, including non-government organisations (NGOs), producer organisations, cotton companies, and government agencies, in several African countries, reaching approximately 100,000 producers. MAFF has recently been further adapted to other contexts, including Myanmar (South East Asia), and Malawi (East Africa).

## Philosophy and principles

MAFF is an advisory approach based on learning and decision-making processes. MAFF principles are derived from the management sciences. The main objective is to strengthen farmers' capacities to manage all the resources of their farms (land, labour, inputs, money, crops, and livestock) and other activities (off-farm and non-farm). Participatory methods are used to enable participants to conduct self-analysis of their practices concerning various farm dimensions (production, processing, marketing, etc.) by considering the different phases of the management cycle (analysis, planning, monitoring, adjustment, and evaluation) and their economic and social environment. MAFF is based on the use of decision-support

tools that enable farmers to analyse their technical and economic results; in most cases based on record keeping.

As a result, producers gain a new understanding of their farming systems. They become able to autonomously improve their lives, through the development of new projects or improvement of their agricultural, managerial, or social practices. Based on these principles, MAFF can be adapted to various agro-ecological, institutional, and organisational settings. MAFF is complementary to other advisory approaches (specialised advice or advice supporting collective actions).

## MAFF in action

To implement MAFF, tools and methods have to be designed according to the local context, governance mechanisms, and financial and human resources available: thus, there is not one standard model. Two different examples are presented in Boxes 1 and 2.

## Capacities required

The quality of the advice provided depends mainly on the advisor's skills. Advisors should have mastery over the content (production techniques, farm management), the modalities of delivering advice (participatory methods, learning processes, facilitation of links with other service providers), and the ability to build personal relationships (listening, empathising, and approachability). Specific training is also needed for farmer-facilitators depending on the tasks they perform.

Due to financial constraints and time limitations, advisors are often trained within the framework of projects. To support more sustainable training mechanisms, MAFF actors need to participate in broader initiatives to train advisors – or, more broadly, rural development agents – within the framework of public and private organisations at the national level (e.g. University of Parakou in Benin). In addition special efforts should be made to train all the actors involved in the organisation of MAFF, including office managers of advisory services, who implement and monitor the activities, and elected farmers who guide, assess MAFF, and carry out lobbying activities. Support and training mechanisms are gradually being established to build the capacity of advisory service providers able to implement MAFF but work is still needed to institutionalise this support within sustainable national institutions.

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### Box 1. Mainstreaming MAFF in Benin since 1995

Benin started implementing MAFF in 1995 through pilot projects. Now it is integrated into the national agricultural advisory policy.

MAFF is implemented through the following phases, facilitated by advisors:

1. Farm-diagnosis to identify farmers' needs.
2. Organisation of group training on agricultural practices based on identified priority needs (fertilisation of maize, cotton pest control, etc.).
3. Management training (crop-season planning, grain stores management, cash flow planning, revenue–expenditure accounts, etc.). Farmers are taught to use specific tools (records and analysis) for each topic and advised on how to incorporate performance criteria (gross margin, cost/income ratio, etc.) to assess their results and make decisions.
4. Individual on-farm advisory visits.
5. Analysis of the technical and economic results, both at plot level and farm level, with groups of farmers. Some advisors use computers to perform additional processing on the

data. These more accurate results are then presented and discussed with each farmer.

6. Self-planning of the next cropping season based on the past results and the objectives farmers want to reach.

Collective activities and exchanges are encouraged: group meetings to discuss results, field visits, trials in farmers' plots. The tools used to support farmers have gone through several adaptations and are contextualised in each region. A key improvement in recent years has been the design of management tools for illiterate farmers.

The MAFF service is provided by a dozen NGOs, farmers' organisations, and by the Ministry of Agriculture, which has recruited more than 250 advisors. One advisor works with 7 to 9 groups, each group gathering 10 to 30 farmers. A farmer-facilitator is trained in each group to undertake some of the advisory tasks. Almost 20 000 farmers are now taking part in MAFF activities in Bénin.

### Box 2. Recent development of MAFF in Myanmar

Gret (a French NGO) has been implementing MAFF in Myanmar since 2011. Due to the lack of farmers' organisations in Myanmar, Gret is implementing the MAFF approach with its own staff in collaboration with a local NGO. MAFF (called *Malasaka* in Myanmar language) is now delivered in three regions of the country, with tools inspired by West African experiences but adapted to the national and local contexts. MAFF is developed in a participatory way, involving farmers in the design of the tools and the provision of services. The main challenge has been to train advisors who could understand and implement the principles and tools of MAFF. The approach started through individual advice. The process is gradually strengthening closer interactions between advisors and farmers and a greater diversity of advisory tools are being designed. In 2014, besides offering individual advice, a collective touch was introduced through group meetings and the promotion of MAFF farmer-facilitators. MAFF in Myanmar is now directly reaching 580 families in more than 111 villages and 74 MAFF farmer-facilitators are operating.

### Costs

Advisory services have significant costs: costs for advisors and MAFF managers (salaries and operating costs); and costs for training and the various back-stopping activities. Total advisory costs are US\$20–80/year/farmer for most MAFF programmes in Africa, depending on the number of farmers per advisor. Where MAFF combines management advice for groups of non-literates and literates or those that rely heavily on farmer-facilitators, the cost is much lower (between US\$2 and US\$20/year/farmer).

MAFF still relies heavily on international aid for funding when implemented by NGOs and producer organisations. It remains a challenge to get direct contributions from farmers because many of them are not able, or willing, to pay for training. Asking for contributions from producer organisations is more realistic when the latter undertake commercial activities (marketing of agricultural products or sale of inputs to members). But these contributions by producers and producer organisations currently cover only a small part of the cost of advisory services and this situation is likely to continue for the foreseeable future. Currently, the most promising possibilities for funding appear to be: (i) contributions from downstream actors from well-structured value chains (direct contribution or levies at the marketing stage); and (ii) the establishment of national or regional development funds aimed at supporting rural development, including advisory activities.

### Strengths and weaknesses

The strengths of MAFF are:

- The point of view of family farmers is at the centre of the approach. This ensures a good match between the farmers' needs and the provision of advisory services.
- It takes into account all the farmer's activities, which helps farmers to make more accurate decisions concerning their farms and their families.
- Farmers are empowered by methods that build their strategic and systemic thinking.
- Due to the diversity of activities linked to MAFF, farmer-facilitators can play a significant role with the support of advisors.
- It may provide data at farm level that can be processed and used by producer organisations to improve the provision of other services or to carry out advocacy activities.

The weaknesses of MAFF are:

- Farmers with more resources (knowledge, equipment, innovativeness, land, etc.) are usually over-represented.
- MAFF requires service providers with strong capacities to adapt and implement the method and tools.
- Investment and time are needed to support in-depth training of farmers and advisors to improve their analytical and managerial skills.
- The cost of the advisory services per participant is high except when farmer-facilitators are well represented.
- Due to the intensive level of support to farmers, access to MAFF remains limited and there is a need to complement the MAFF approach with more simple advisory methods and to improve tools for illiterate farmers.

### Best-fit considerations

Although MAFF is better suited for contexts where farmers are already active in markets and benefitting from various economic opportunities, it can be adapted to a large range of farmers. For example, in Myanmar, fisherfolk and livestock breeders are joining MAFF, along with rice producers and subsistence farmers.

MAFF farmers have some specific personal characteristics. First, those who join MAFF do it on a volunteer basis (incentives are inefficient), reflecting their desire to change and to improve their farming and management practices. Second, MAFF is mostly based on record-keeping – even if there are interesting experiences with illiterate farmers – so participants are generally literate or involved in functional literacy programmes. MAFF tends to more easily reach proactive and literate farmers, as they are the ones who will more easily adopt a management mindset and use record-keeping tools. When introducing MAFF in a new area, service providers may rely on these categories of farmers for quick adoption. Then they can adapt the approach to reach other categories (e.g. non-literate or less innovative farmers) with the use of specific management tools and facilitation methods. However, in some cases, service providers started with illiterate farmers.

### Governance

Many actors are involved in providing MAFF: donors, government agencies (either implementing and/or coordinating advisory services), projects implementing or supporting service providers, NGOs, producer organisations, etc. As a result there are numerous governance mechanisms in order to fund, monitor, and assess the service provision. To a large extent, such governance mechanisms depend on the nature of the main organisation providing advice, the history of the advisory service, and the funding arrangements.

Producer organisations play a special role in the implementation of MAFF. Advisory services implemented by producer organisations can be expected to be more in line with farmer needs. However, in some countries, producer

organisations do not have the human and financial capacities to provide such services.

Various mechanisms are used for coordination between the various actors (contracts, steering committees) and usually one actor plays the role of broker to facilitate the interactions.

Finally MAFF is generally linked to other advisory services such as specialised advice and it is therefore part of the wider advisory system where coordination is needed but often is still lacking.

### Change induced by MAFF

In different countries where MAFF evaluations have been undertaken, farmers attributed several kinds of changes to MAFF that can be summarised under three categories:

- **Agricultural techniques:** new variety adoption, sowing techniques, compost use, crop rotation, etc.
- **Farm management practices and family budget management practices:** better measures of farm and family earning and expenses, profitability calculation, storage planning, cash flow planning.
- **Strategic management:** MAFF enables farmers to realise that they can change by themselves, anticipate, and have a better understanding of what they want, what they can do, and how they can do it.

MAFF can change the social relationships within families and villages because participants develop entrepreneurial skills at the individual level. MAFF also has an impact on non-participants because participants and non-participants exchange knowledge within their networks. However, the changes related to new managerial practices are more difficult to disseminate because non-participants do not experience a full learning process. MAFF is also an approach to strengthening producer organisations because some participants then become leaders in their producer or other organisation, which then gets the benefit of the management skills acquired through MAFF.

### Conclusion: a gradual scaling up and scaling out

MAFF has been adopted by many actors and adapted to diverse contexts. However, there is a need to scale up and out the approach. Regarding scaling out, options include mobilising producer organisations and farmer-facilitators or improving coordination at regional level among advisory services providers in order to promote synergies. Regarding scaling up, prospects include designing a mix of solutions to fund MAFF in the longer term and implementing suitable training mechanisms for advisory actors. However, public policies must better define the strategy regarding advisory services and the place of MAFF within the advisory system. Solutions need to be developed in conjunction with all stakeholders involved in

MAFF: NGOs, producers, producer organisations, and local and national government).

## Training material

### For advisors, supervisors, managers, and training centres

AFDI. 2012. *Guide Pratique. Quel accompagnement proposer à une organisation paysanne pour choisir une activité de conseil à l'exploitation familiale (CEF) ?* Paris: Groupe Gestion AFDI.

Anonyme. 2002. *Mise en place d'un conseil de gestion aux exploitations cotonnières dans la zone Ouest du Burkina Faso. Prototype du Guide du conseiller.* Burkina Faso: Sofitex, UNPCB.

Gret. 2015. *Manual of Malasaka tools.* Yangon, Myanmar: Gret.

### For farmers

Sofitex, Faso Coton, Socoma, UNPCB. Undated. *Mon livret de conseil.* Bobo-Dioulasso, Burkina Faso.

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Faure, G., Toillier, A., Legile, A., Moumouni, I., Pelon, V., Gouton, P. and Gansonré, M. 2013. How to improve the sustainability of approaches for management advice for family farms in Africa? Toward a research and development agenda. *Extension System*, 29(2): 29–50.

Faure, G., Dugue, P. and Beauval V. 2004. *Conseil à l'exploitation familiale, Expériences en Afrique de l'Ouest et du Centre.* Paris/Montpellier, France: Gret-CIRAD.

Inter-Réseaux working group on MAFF (in French) Available at: <http://www.inter-reseaux.org/groupe-de-travail/pole-conseil-a-l-exploitation/>

MAFF page of the FERT network. Available at: <http://www.fert.fr/en/tag/conseil-exploitation-familiale/>

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 8, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by CIRAD and Gret with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Section III

## **Advisory methods**



# Innovation platforms

Helena Posthumus and Mariana Wongtschowski

## Introduction

Farmers, agri-business and service providers have to innovate continuously to adapt to an ever-changing environment (including markets, climate and resources). Innovation is about putting ideas that are new to a certain location into practice, and in this way changing the situation of those living in this area for the better. These “ideas” can be a new way of irrigating a field (i.e. a technology), a new way of organizing women farmers to bulk their produce (i.e. an organizational innovation), or a new policy that supports smallholders in getting bank loans (i.e. an institutional innovation). In agriculture, innovation often involves a combination of these different types of changes. For example: a new way of diverting water to fields requires that the farmers organize themselves in water use associations, which must in turn be supported by the local authorities.

Innovation is stimulated when multiple actors (farmers, NGOs, service providers, traders, agro-dealers, researchers, policy-makers) interact and share their ideas, knowledge and opinions to come up with new solutions. Innovation platforms can be used by advisory services and other actors as a means to bring different actors together to discuss and negotiate collective or coordinated action.

## Philosophy and principles

Innovation platforms are made up of various actors who communicate, co-operate and share tasks to carry out activities needed for innovation to take place<sup>1</sup>.

There are a few principles that are important:

- Diverse composition of stakeholders.
- Address a shared problem or opportunity, not the agenda of one or two members only.
- Facilitation by a neutral person/organisation with convening authority.
  - Initial success motivates the members to commit to the platform.
  - Change resulting from the innovation should benefit multiple members.
  - Exchange and learning should remain central.

- Platform members must show respect to each other despite of diverging opinions and knowledge.
- Systems for ensuring transparency and accountability must be in place.

Platforms can exist at multiple levels. Local platforms, for example, tend to address specific problems or opportunities such as improving the efficiency of a specific value chain. Local platforms are well placed to test new ideas and generate action on the ground. Platforms at national or regional levels often set the agenda for agricultural development, and allow stakeholders, including farmers through their representatives, to influence policies (see Case 1). Linking platforms at different levels offer several benefits such as: sharing successful ideas, empowering local actors to influence policy, fostering dialogue in policy-making, developing value chains, and increasing legitimacy and learning<sup>2</sup>.

### Case 1

The Ghana Oil Palm platform was set up in the context of the Convergence of Sciences-Strengthening of Innovation Systems program in Ghana, to address problems related to processing oil palm into cooking oil, soaps, cosmetics and biofuel. The platform (called a Concertation action and Innovation Group – CIG), was formed at national level but operates largely in Kwaebibrim district, one of Ghana’s main oil palm-growing areas. Linked to the platform are two local platforms which aim to support small-scale processors in improving their output for export and for industrial markets: (1) An experimentation group that tests processing practices and (2) A district-level stakeholder group, which sets the agenda for experiments; and plays an important role in lobbying the district administration<sup>3</sup>.

## Implementation

A lot can be said about how innovation platforms are set-up and put into motion. We organize the information in “steps”. Needless to say, these steps are a simplification of reality and aimed only to help readers understand the basic dynamics around innovation platforms<sup>4</sup>.

1 Nederlof ES, Wongtschowski M, Lee F van der. 2011. Putting heads together: Agricultural innovation platforms in practice. KIT publishers, Amsterdam

2 Tucker J, Schut M, Klerkx L. 2013. Linking action at different levels through innovation platforms. Innovation Platforms Practice Brief 9. ILRI. <http://cgspace.cgiar.org/bitstream/handle/10568/34163/Brief9.pdf?sequence=1>

3 Nederlof, E.S. and Pyburn, R. 2012. One finger cannot lift a rock. Facilitating innovation platforms to trigger institutional change in West Africa. Amsterdam: Royal Tropical Institute.

4 This section draws on: Tennyson R. 2005. The Partnering Toolkit. Published by GAIN, IBLF and UNDP, London. Critchley W, Verburg M, Veldhuizen L van. (Eds.) 2006. Facilitating multi-stakeholder partnerships: Lessons from ProInnova. Silang, Cavite, Philippines: IIRR/Leusden, ETC.

1. **Ask yourself: is an innovation platform the best tool?** Consider the costs to be incurred, the issues at stake (i.e. do you want to disseminate an idea or to solve a problem? – the former can probably be done in much cheaper ways), and whether platform members are willing to work together (see Case 2). If an innovation platform looks right to you, then define your (general!) topic or theme, and at what level the platform should operate, e.g. district level, provincial level, or national level.

## Case 2

In Tanzania, the Research Into Use (RIU) programme selected indigenous chicken as its main focus because it requires minimum resources for investment, is kept by both men and women of all ages, is less dependent on agricultural seasons and provides quick returns throughout the year. A private advisory services company – MUVEK Development Solutions Ltd – was hired by the RIU programme to co-ordinate the initiative. Though the intention was to establish an innovation platform, initial difficulties in getting partners to work together led MUVEK to change its strategy. Instead, it moved towards acting as a broker of bilateral contacts and interaction in what they found to be a more flexible and efficient set-up<sup>5</sup>.

2. **Look at what is already in place** – do not start from scratch if not needed. Build on previous partnerships and initiatives. Ask potential partners which initiatives they have been involved in, and whether the innovation platform will add value to ongoing initiatives. (Re-)consider, on that basis, whether a new innovation platform is really the best tool to use – or if existing multi-stakeholder structures could be used instead.

**Recommended tools:** interviews with key partners, stakeholder analysis. Materials found at: <http://www.wageningenportals.nl/msp/tools>

3. **Identify potential platform members:** This step can be done either in a meeting with several initiators, or prior to that. It includes:
  - Identify which actors (individuals, partner organizations, etc.) would add value to the platform. Do not limit the choice to like-minded partners or usual suspects; but do realize that the agenda needs to move forward quickly (i.e. not be dragged by endless discussions with actors unwilling to cooperate).
  - Select the most appropriate actors and secure their active involvement by discussing with them, prior to the meeting, about their interest and concerns.

**Recommended tools:** stakeholder analysis, interviews with key partners. Materials found at: <http://www.wageningenportals.nl/msp/tools>

4. **Jointly develop an action plan:** this step is best done in a meeting/workshop; but can be prepared by discussing with key actors – and marginal actors likely to be excluded from the discussion, such as women farmers – beforehand. It includes:

- Define main concerns and opportunities the platform could focus on.
- Prioritise these – focus on a few, concrete, and tangible issues; for which there is energy and enthusiasm in the group.
- Define a few concrete activities, and define who is responsible for making those happen, by when. One way to define activities is to let actors themselves say what they want to do, or be responsible to do, to help solving a certain problem.

**Recommended tools:** action planning, ranking of priorities. Materials found at: [http://www.ramsar.org/pdf/outreach\\_actionplanning\\_guide.pdf](http://www.ramsar.org/pdf/outreach_actionplanning_guide.pdf)

5. **Define roles and responsibilities:** in a meeting, define the platform's governance structure and the general division of responsibilities (see section on governance below).

**Recommended tools:** open discussion at meeting. Materials found at: <http://thepartneringinitiative.org/w/resources/toolbook-series/the-partnering-toolbook/>

6. **Keep partners engaged:** a common challenge of innovation platforms, as partners may stop coming to the meetings after a few initial well-attended gatherings. A few tips:
  - Commitment grows from successful first actions: the earlier platform members start seeing benefits of the platform, the better.
  - Choose the "right" individuals to participate; those preferably not sitting too "high" in an organization hierarchy (and who will probably not have the time to attend the platform's meetings) nor too "low" (with little or no decision making power, frustrating him/herself and others by taking too long to make things happen).
  - Task the facilitator to make an additional effort to engage those who may not be at ease to speak out at meetings, such as women farmers.
7. **Revisit, re-plan:** a platform may start with a specific problem. Once this is solved, it needs to move on. Re-planning is therefore an important step, to be taken often. It involves:
  - Check how far you are in solving the problem (or taking full advantage of an opportunity) prioritised. What has gone right so far? What hasn't? What could we learn from that?
  - Discuss whether it is time to choose other topics, and go again through a process of prioritisation and action planning.

<sup>5</sup> Nederlof ES, Wongtschowski M, Lee F van der. 2011. Putting heads together: Agricultural innovation platforms in practice. KIT publishers, Amsterdam.

8. **Plan for the long term:** often, innovation platforms start up as part of a project. What happens after the project ends? It is important to say that a platform has its existence justified only if it continues to catalyse positive action. So once that positive action ends, the platform may as well be dissolved. If the platform partners intend to continue working together, they have to make agreements – as early in the process as possible – on how the functioning costs of the platform (meeting venues, broker, implementation of activities) will be covered.

## Governance and management

The existence of a well-working coordination body (core group, board or committee) which is accountable towards platform members (and donors where present) makes the innovation platform more transparent and trustworthy. These can be rotating functions, so to allow actors to change roles throughout the process.

Platform members need to be kept up-to-date, and they need to know what other members do. This is a challenge when activity implementation is in the hands of many individuals/ organizations. It can be improved through the following activities:

- Making sure platform members feel part of planning, implementation and discussion of achievements.
- Holding regular meeting in which partners report on their activities. There is a risk of overburdening the platform members, so keep it simple and pragmatic. Asking platform members to write reports every month is simply not realistic.
- Circulating information through e-mail/text messages, visits to platform members.
- Organizing a meeting with platform members' managers once in a while (if appropriate).
- Organizing joint field days to see what other platform members are doing.

## Capacities required of providers and participants

A key factor of success for innovation platform is that of good facilitation. The facilitator (sometimes called "innovation broker") needs to have some degree of neutrality. The facilitator can be an individual or an organisation; from either a research organization, an NGO, an advisory service provider, a farmer. S/he should be knowledgeable of the concerned topic or theme addressed, and should have convening power to bring stakeholders together. The facilitator also needs to have the right attitude: being patient and culturally sensitive, open-minded, and empathic<sup>7</sup>.

## Power issues

Platform members have different interests and different means to exercise influence and power. Marginal groups are easily overlooked, and it requires effort to make innovation platforms socially inclusive. Facilitators need to mediate between the different interests, and in some cases may need to advocate on behalf of less powerful members. Participatory videos, role playing, and meetings in informal spaces can be effective ways to deal with power issues<sup>6</sup>.

## Costs

The costs of an innovation platform vary greatly. The operational costs can range between zero to several thousands of dollars per year. Platform members also incur costs; all members have to commit time to the meetings and activities of the innovation platform. Costs to consider for sustaining an innovation platform are:

- Facilitator (salary or at least payment for incurred expenses such as travel)
- Venue and refreshments for meetings
- Travel costs of participants
- Per diems for participants to attend meetings (only if strictly required as this can create wrong incentives)
- Communication costs (e.g. phone bills, printing)
- Funds for experiments with new ideas

In principle, there is a good argument for public funds to be used to support start-up of platforms, provided that some co-funding (in cash or kind) from other stakeholders are in place.

## Potential impact

Innovation platforms will not lead to immediate and direct impact as such, as their contribution is supporting people to talk to each other and to act together towards putting new ideas and solutions into practice. Often, the benefits from working with innovation platforms are found elsewhere than originally planned, because of their dynamic nature. The main potential of innovation platforms is to achieve changes in the behaviour of the platform members, which has the potential of achieving large tangible impacts in the long term<sup>8</sup>. Innovation platforms are not an appropriate mechanism to disseminate new technologies or practices at scale.

## Training materials

Centre for Development Innovation. Knowledge co-creation portal: Multi-stakeholder processes. Tools at: <http://www.wageningenportals.nl/msp/tools>

6 Cullen B, Tucker J, Hommann-Kee Tui S. 2013. Power dynamics and representation in innovation platforms. Innovation Platforms Practice Brief 4. ILRI. <http://cgspace.cgiar.org/bitstream/handle/10568/34166/Brief4.pdf?sequence=1>

7 Heemskerk W, Klerkx L, Sitima J. 2011. Brokering innovation. In: Nederlof et al. (Eds). Putting heads together: Agricultural innovation platforms in practice. Bulletin 396. KIT Publishers. Pp 43–54.

8 Duncan, A.J., Le Borgne, E., Maute, F. and Tucker, J. 2013. Impact of innovation platforms. Innovation Platforms Practice Brief 12. Nairobi, Kenya: ILRI.

## Strengths and weaknesses

### Strengths

- Tackles institutional issues (e.g. difficulty to collaborate between organisations, policies, negative attitudes towards other actors)
- Strengthens capacity to innovate (adapt to change) of actors involved, which will remain after/if the platform ceases to exist
- Allows actors that are often ignored to speak up, if well facilitated
- Allows solving of problems where solutions depend on many actors acting together
- Dynamic: may change over time, and so remain relevant

### Weaknesses

- Often takes time, will not lead to substantial change in a few months' time
- Not adequate for pure technology dissemination
- Risk having meetings turn into “talk shops;” Needs to be steered towards action
- Depends on well-trained facilitators
- Difficult to deal with actors that are fierce competitors
- Unpredictable: difficult to promise deliverables to donors, because these depend on the interest and capacity of the platform members which change over time

Ramsar CEPA. A Guide to Participatory Action Planning and Techniques for Facilitating Groups: Supporting people taking action for the wise use of wetlands and other natural resources through an integrated approach to planning communication, education, participation and awareness raising. Page 77–85 [http://www.ramsar.org/pdf/outreach\\_actionplanning\\_guide.pdf](http://www.ramsar.org/pdf/outreach_actionplanning_guide.pdf)

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This content was originally published in July 2014 as GFRAS Global Good Practice Note 1, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the Royal Tropical Institute (KIT), with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# Enabling rural innovation

*Thomas Pircher, Amos Owamani, Michael Hauser, and Ann Waters-Bayer*

## Introduction

Enabling rural innovation (ERI) is a participatory approach that puts family farmers in the centre of agricultural development. It strengthens their technical, organisational, social, and entrepreneurial capacities to shift from subsistence to market-oriented agriculture. It aims at developing profitable agro-enterprises without jeopardising food and nutrition security. Farmer groups are supported in (re-)discovering social, technical, natural, and economic resources around them, setting group objectives and monitoring their progress towards them, making market studies, experimenting with different technologies, and setting up agro-enterprises, while safeguarding their natural resource base.

The methods used in the five ERI key modules are not completely new, but integrating them into the ERI approach is. The International Centre for Tropical Agriculture (CIAT) spearheaded ERI from 2001 onwards. Following ERI projects in Eastern and Southern Africa, they joined with the Centre for Development Research (CDR) at the University of Natural Resources and Life Sciences in Vienna (BOKU) to further develop the approach for organic agriculture and niche markets in Uganda, in partnership with Africa 2000 Network and Uganda Environmental Education Foundation (UEEF).

Later, several non-government organisations (NGOs) in East Africa took up the ERI approach as a methodological framework for rural development. After gaining initial experience, the NGOs HORIZONT3000 and Trias Uganda consolidated their experiences in a practical manual to make ERI training more effective and efficient. Local NGOs and farmer district associations in Uganda, Tanzania, and Kenya are now implementing ERI under programmes of NGOs based in Austria (HORIZONT3000), Belgium (Trias), and the Netherlands (ZOA).

## Philosophy and principles

ERI is a solution-focused approach that builds on farmers' strengths. It stimulates farmer groups to identify available natural, social, financial, and personal resources and helps them find innovative solutions and make informed decisions on marketing, production, and consumption. Rather than being passive 'beneficiaries', farmers develop, drive, and own agro-enterprises. They choose what they need and want after being supported in acquiring production and marketing information. ERI thus enables farmers to respond appropriately to dynamic markets and changing environmental conditions.

The approach encourages entrepreneurial spirit: 'Produce what you can market rather than market what you produce.' It helps farmers balance food- and cash-crop production through easily applicable decision-support methods that put great emphasis on managing natural resources so that income security does not compromise food security and environmental sustainability.

Gender balance in both participation and decision-making plays a crucial role in ERI. Based on reporting data from 2014 in the HORIZONT3000 ERI East Africa project, 64% of farmer group members are women and 60% of the leadership positions are held by women.

## Implementation

The key players in implementing ERI are community development facilitators (CDFs), usually employed by local NGOs or farmer district associations. They start by identifying and selecting existing farmer groups or forming farmer groups that would like to work with the ERI approach. After discussing the participants' expectations and conducting group-strengthening activities, the CDFs guide farmers through a series of practical learning sessions as outlined in Box 1. One CDF usually works with 8–10 farmer groups in facilitating ERI modules and making follow-up mentoring visits.

## Capacities required and how developed

The main qualifications to become a CDF are: profound knowledge of agriculture, natural resource management, and community development; experience in facilitating participatory, bottom-up development processes with farmer groups; and enthusiasm for fieldwork and confidence in farmers' capabilities to lead development processes.

Over a six-month period, including practical fieldwork, ERI trainers hired by supporting NGOs build the CDFs' capacities in all ERI modules and in the facilitation skills needed for working with farmer groups. In individual mentoring sessions, CDFs receive tailor-made refresher training and are accompanied in the field during their work with farmer groups.

The costs of hiring and availability of ERI trainers varies with their experience and current form of employment. New ERI trainers are sourced by gradually engaging motivated CDFs in training activities within ongoing projects until they have the necessary skills and experience.

### Box 1. Key modules in the ERI approach

1. Participatory diagnosis – Farmer groups assess the resources and opportunities available to them and how they can use them to achieve their goals. They develop a common vision and agree on objectives and an action plan to realise them. The most important tools for this are role-play methods from the Participatory Rural Appraisal (PRA) Tool Box,<sup>1</sup> such as river code, visioning, seasonal calendar, resource maps, and institutional network analysis.
  2. Participatory market research – Farmer groups conduct market research to identify, prioritise, and analyse profitable markets and enterprises. Meetings are held with all stakeholders relevant for agro-enterprises (farmers, input suppliers, traders, extensionists, microfinance actors, local administration, etc). Based on the collected information, farmer groups conduct a cost–benefit analysis and risk assessments to select viable enterprises. Pairwise ranking helps to prioritise market options.
  3. Farmer participatory research – Farmer groups learn about the principles of sustainable agriculture and experiment in their own fields to test which technologies work best for new cash- and food-crop opportunities. A committee within the group develops a research protocol and data collection tools and analyses the research findings.
  4. Enterprise development – Farmer groups develop profitable enterprises and build sustainable business relations based on simple business plans and market intelligence.
  5. Participatory monitoring and evaluation (PM&E) – Farmer groups keep track of their progress towards achieving
  6. their goals and learn from successes and failures. Another internal committee develops monitoring tools, collects, and analyses the data, and gives feedback to the group by using PM&E tool kits.
- + Crosscutting issues – These include gender, group dynamics, and governance, and are addressed in all five modules.

## Governance

ERI can be implemented on different scales, varying from small projects in local organisations to large regional programmes. The stakeholders involved vary with the set-up of projects as designed by supporting NGOs. Typical stakeholders in earlier or ongoing ERI projects in East Africa and their roles in governance are described in Table 1.

## Costs

Cost for ERI projects vary considerably with the number of farmer groups and the distance between these groups and where CDFs are based. In most ERI projects, salaries of CDFs, overhead costs of implementing partners, travel by CDFs to the field, mentoring sessions, and exposure visits of farmer groups (e.g. market studies, field days) constitute the major costs. Other costs to be considered are for training materials (ERI facilitator's manual and charts), CDF training and mentoring (about six weeks' group training by ERI trainers), and operational costs of the supporting NGOs and their implementing partners.

A set of training materials costs about €250. Costs for training and mentoring one CDF range from €1500 to €2000. Facilitating and then mentoring one farmer group (15–25 members) in all ERI modules and crosscutting issues over a 2-year period costs between €1850 and €4300 in HORIZONT3000's ERI East Africa Project.

## Strengths and weaknesses

The greatest strength of the ERI approach is the visioning at the onset of the process in combination with resource-based planning, while the PM&E module enables farmers to track

progress towards their goals. This combination leads to a demand-driven development process. Farmer groups build on existing resources and develop enterprises suited to their specific needs and the local context.

Another strength is that farmers gain knowledge and skills that can be applied not only for one specific crop or livestock species, but for a broad range of agro-enterprises. Farmers develop a business-oriented mindset and, by giving explicit attention to sustainability issues, they learn to balance production, natural resource management, and food security.

A challenge in the approach is that it requires long-term commitment by the supporting organisations (e.g. about 30 training sessions followed by mentoring). Farmers also need to make a large investment of their time and labour to work through the ERI modules. For example, the module on farmer participatory research sometimes takes several seasons.

The ERI approach does not provide financial support for developing agro-enterprises. Therefore, farmer groups depend on capital from group savings and credit schemes or they must approach nearby financial institutions to seek loans. This can slow down the process of expanding their enterprises and requires them to start on a small scale, with limited profit in initial years.

## Best-fit considerations

The target groups of ERI are family farmers already organised (or willing to be) in small groups that want to engage in farming as a business. Although the principles and some of the training sessions are relevant to more commercially advanced

<sup>1</sup> Available at: <http://www.fao.org/docrep/003/x5996e/x5996e06.htm>

**Table 1. Typical ERI stakeholders and their roles**

Stakeholders	Role in governance of ERI activities
Farmer groups	<ul style="list-style-type: none"> <li>• Actively engage in ERI activities and participate in training and mentoring sessions</li> <li>• Organise themselves as a group and build committees for farmer participatory research, participatory market research, and PM&amp;E</li> <li>• Develop a group vision, work towards achieving their short- and long-term objectives and monitor progress</li> <li>• Continuously collect up-to-date market information (e.g. by inquiring prices from traders) and inform their group</li> <li>• Conduct experiments on crop and/or animal husbandry and give feedback to their group</li> <li>• Develop several enterprises for food security and marketing</li> </ul>
Implementing partners (NGOs, community-based organisations or farmer district associations)	<ul style="list-style-type: none"> <li>• Plan field activities together with supporting NGOs and funders</li> <li>• Employ a team of CDFs who facilitate learning processes in farmer groups and mentor them according to needs</li> <li>• Develop own ERI capacities through participation in training</li> <li>• Organise exposure visits and field days together with participating farmer groups</li> <li>• Monitor progress of farmer groups in applying the approach</li> </ul>
Supporting NGOs	<ul style="list-style-type: none"> <li>• Maintain pool of trainers with long-term experience in applying the approach</li> <li>• Organise training, mentoring, and reflection meetings to build capacities of CDFs in implementing partners</li> <li>• Monitor and evaluate ERI activities of implementing partners</li> <li>• Guide implementing partners in planning and implementing ERI field activities</li> <li>• Provide funding for implementing partners</li> </ul>

farmers, the approach is not primarily meant for farmers already with successful agri-businesses and organised in higher-level associations or cooperatives.

The ERI approach includes women, youth, and disadvantaged groups, and creates appropriate livelihood opportunities for them. In ERI projects in Uganda and Tanzania, many women groups successfully built agro-enterprises upon their specific expertise, such as a catering service with collectively produced vegetables or producing and marketing products like local vegetable seed, sweet potato juice, and crisps. It has proved useful for women's husbands to be included in ERI training so that they gain a better understanding of their spouses' activities and commitments.

As ERI is an approach that builds on attitudinal change and commonly applicable principles of learning by experimentation or market studies, it is not limited to a specific area of innovation. In earlier and ongoing ERI projects in East Africa, farmers developed innovations in production technologies (e.g. by trying out different crop varieties or different cultivation or livestock management practices) and social innovations (e.g. collective production, storage and marketing of produce to different buyers, forming producer associations). Not only groups but also individual farmers embraced the idea of experimental learning and increased their innovative capacity.

Since applying the ERI approach starts with identifying locally available resources as a basis for developing agro-enterprises,

it can be used in different ecological environments. In areas where opportunities for diversifying production and marketing of produce are limited, farmers try to overcome those obstacles with acquired knowledge and skills (e.g. by going to distant markets with larger quantities of bulked produce). Difficulties have emerged when working with farmer groups that have become accustomed to receiving free handouts – such as seeds or other farm inputs – from organisations in the region, as this lowers the farmers' motivation to invest in their enterprise themselves. The approach is not suitable for farmers living in extremely remote areas, as they are too far from potential markets to collect market information and sell their produce.

### Evidence of impact and potential scalability

Evaluations of ERI projects in East Africa showed that ERI empowered farmers and stimulated their self-confidence and critical thinking. Farmers developed business attitudes, knowledge, and skills that led to improved production and productivity, better quality of produce, better trade relations, better prices, and increased incomes. Success stories and evaluations<sup>2</sup> describe how farmers can now transfer their skills in experimentation and marketing to other enterprises and can respond quickly to a changing environment.

Project evaluations showed that neighbouring communities to participating farmers also benefitted from ERI projects by starting new enterprises, applying soil and water management practices observed in farmer-led experiments, or setting

<sup>2</sup> <http://www.eri-approach.info/impact>

up kitchen gardens. However, scaling out the approach horizontally requires substantial funds for the implementing and supporting organisations. Moreover, ERI facilitation with farmer groups requires qualified CDFs to assure the quality of learning and follow-up activities. If the needed resources can be provided by higher-level institutions, e.g. national extension services, the ERI approach could be scaled up gradually while building capacities of CDFs and their trainers.

### Issues of sustainability of the approach

The design of the ERI approach supports sustainability on a farmer-group level, as the development process is owned and led by farmers. Local committees of elected group members coordinate the monitoring and evaluation, experimentation, market studies, and enterprise development. The key actors, once equipped with relevant skills and knowledge, remain active after the supporting organisations have withdrawn.

The risk that farmer groups stop following ERI principles after experiencing all learning sessions can be decreased by prolonged mentoring periods and strengthening the groups to help them become more independent, e.g. through group savings and credit schemes, strong leadership structures and skills, assigning farmer trainers for group mentoring, and linking them with nearby ERI groups so that they can exchange experiences and form producer associations or cooperatives.

Sustainability in the sense that relevant organisations can continue to support ERI farmer groups is increased by including several persons in each supporting organisation (e.g. programme officers) and in potential cooperating organisations (e.g. savings and credit cooperatives, research institutions) in the CDF training. If these stakeholders have a good understanding of farmers' capacities, the ERI approach, and participatory extension approaches in general, they can cooperate better with ERI farmer groups.

### Training materials

A concise but simple facilitator's manual, compiled by HORIZONT3000, Trias, and the Ugandan company Mango Tree, consisting of 25 re-printable booklets and 17 visual tools covering the core ERI modules. The facilitator's manual (currently only in English) can be downloaded from the website ([www.eri-approach.info/training-materials](http://www.eri-approach.info/training-materials)) and the visual tools can be purchased from Mango Tree Uganda. A further manual, including more portable formats of the visual ERI tool, is currently being developed by HORIZONT3000 and Trias.

A team of ERI trainers in East Africa can be contacted via the ERI website ([www.eri-approach.info/team-of-trainers](http://www.eri-approach.info/team-of-trainers)).

### Further reading

Descriptions of the ERI approach, earlier and ongoing ERI projects, publications, training materials, and other information are available at [www.eri-approach.info](http://www.eri-approach.info)

Delve, R.J. and Roothaert, R.L. 2004. How can smallholder farmer–market linkages increase adoption of improved technology options and natural resource management strategies? *Uganda Journal of Agricultural Sciences*, 9:334–341.

Kaaria, S., Njuki, J., Abenakyo, A., Delve, R. and Sanginga, P. 2008. Assessment of the Enabling Rural Innovation (ERI) approach: case studies from Malawi and Uganda. *Natural Resources Forum*, 32: 53–63. doi: 10.1111/j.1477-8947.2008.00174.x

Kaaria, S., Sanginga, P., Njuki, J., Delve, R., Chitsike, C. and Best, R. 2008. *Enabling Rural Innovation in Africa: an approach for empowering smallholder farmers to access market opportunities for improved livelihoods*. Available at: [www.future-agricultures.org](http://www.future-agricultures.org).

Hauser, M., Aigelsperger, L., Owamani, A. and Delve, R.J. 2010. Learning achievements of farmers during the transition to market-oriented organic agriculture in rural Uganda. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, 111(1): 1–11.

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 5, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by HORIZONT3000, BOKU University and Prolinnova with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Farmer-to-farmer extension

Steven Franzel, Ann Degrande, Evelyne Kiptot, Josephine Kirui, Jane Kugonza, John Preissing, and Brent Simpson

## Introduction

Following the decline of investments in government extension services in the 1980s and 1990s, community-based extension approaches have become increasingly important. One such approach is farmer-to-farmer extension (F2FE), which is defined here as the provision of training by farmers to farmers, often through the creation of a structure of farmer-trainers. We use 'farmer-trainer' as a generic term, even though we recognise that different names (e.g. lead farmer, farmer-promoter, community knowledge worker) may imply different roles.

F2FE programmes date back considerably and have been used in the Philippines since the 1950s and in Central America since the 1970s.<sup>1</sup> F2FE programmes have grown tremendously in Africa in recent years<sup>2</sup> and are now quite common, with 78% of development organisations using the approach in Malawi<sup>3</sup> and one-third using it across seven regions of Cameroon.<sup>4</sup> As common as these programmes are, training materials on the use of the approach and analyses, and comparisons of F2FE programmes are scarce.

## Philosophy and principles

F2FE can help in building effective, farmer-centred extension systems and empowering farmers as change agents for improving livelihoods in their communities.

Key principles include:

- Farmers and local institutions (e.g. producer organisations or village leaders) should play a key role in selecting farmer-trainers and monitoring and evaluating them. This helps make the programmes more accountable to the community or groups that they serve.
- Farmer-trainers are 'of the community'; they communicate in local languages and are more sensitive to local cultures, mannerisms, farming practices, and farmers' needs.
- Farmer-trainers should be selected on the basis of their skills and interest in sharing information, not just on their farming expertise.
- Farmer-trainers need strong linkages with and support from development agents (whether government, non-government organisation (NGO), or private), the people who train and backstop them. Farmer-trainers generally serve as a



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complement to existing extension systems, rather than being a substitute for them.

- Facilitating organisations and local institutions need to be proactive in ensuring that women as well as men become farmer-trainers.
- Simple and appropriate reference materials should be made available to the farmer-trainers.

In some cases, F2FE is simply an arm of a top-down technology transfer model, in which communication is one-way, from extension staff to farmer-trainers to farmers. Reorienting such programmes to use a more demand-driven, participatory model is something that must be done by programme designers and managers.

## Implementation

The first step in implementation is to assess whether the F2FE approach is appropriate for the farmers and region in question. A good starting point is to discuss with local authorities and farmers to find out about their interest in testing the approach.

1 Selener, D., Chenier, J. and Zelaya, R. 1997. *Farmer to farmer extension: lessons from the field*. New York: International Institute for Rural Reconstruction.

2 Simpson, B., Franzel, S., Degrande, A., Kundhlande, G. and Tsafack, S. 2015. *Farmer to farmer extension: issues in planning and implementation*. MEAS Technical Note. Urbana, IL: Modernizing Extension and Advisory Services, USAID.

3 Masangano, C. and Mthinda, C. 2012. Pluralistic extension system in Malawi. IFPRI Discussion Paper 01171. Washington, D.C.: International Food Policy Research Institute (IFPRI). Available at: <http://www.ifpri.org/publication/pluralistic-extension-system-malawi>

4 Tsafack, S., Degrande, A., Franzel, S. and Simpson, B. 2014. *Farmer-to-farmer extension in Cameroon: a survey of extension organisations*. ICRAF Working Paper No. 182. Nairobi: World Agroforestry Centre.

The next step is to select farmer-trainers. Frequently, extension services and communities (i.e. producer organisations or local authorities) select farmer-trainers together. In other cases, only the extension service or the community selects them. A common procedure is for extension services to agree on criteria with community representatives and then the representatives use the criteria to select the farmer-trainers. Criteria vary but often include being able to read and write in a language commonly used by the farmers, having a good reputation, interest and skill in sharing information, farming skills, and being a full-time resident in the community.

Farmer-trainers train farmers on a wide range of practices covering livestock, crops, agroforestry, and fisheries. Roles and responsibilities of farmer-trainers vary but the most frequently mentioned ones include training, monitoring/following up, advising, conducting demonstrations, organising meetings, and acting as liaison between farmers and development agents. Farmer-trainers often serve the farmer group to which they belong and train others outside the group as well. In Malawi, extension workers typically supervise about 15 farmer-trainers each, who each train about 60 farmers.

Many organisations compensate farmer-trainers for some expenses, such as transportation or airtime for mobile phones. Others do not. Only a few organisations pay farmer-trainers salaries or allowances, and these are typically much less than what an extension agent earns. Survey results from Cameroon, Kenya, and Malawi showed that all of the organisations paying farmers' salaries or allowances were NGOs or farmer organisations.<sup>5</sup> But in Indonesia and Peru (Box 1), governments pay farmer-trainers salaries, albeit at lower levels than extension staff. There is controversy in many places over whether to pay farmer-trainers or not. Some argue that they work well without payments and that such payments are not sustainable. Others say that they should be compensated for their efforts and that such compensation motivates them to perform better. It isn't possible to give overall guidance on payments as whether to pay or not depends on the circumstances.

### Capacities required and how developed

Farmer-trainers need training in both technical aspects (e.g. production practices and marketing) and communication. Most organisations start with several days of residential training, involving presentations, field activities (e.g. establishing demonstrations), and field tours. Unfortunately, some organisations only provide training at the beginning of a farmer-trainer's tenure. Periodic training, field backstopping, and on-the-job training, when extension staff meet farmer-

trainers, are also important for maintaining farmer-trainers' motivation and ensuring they have something of value to offer others. Farmer-trainers also need to be taught how to access information themselves. The rapid spread of mobile phones and, in particular, smart phones may help facilitate farmer-trainers' access to information.

### Costs

The main costs of an F2FE programme are training (2–3 days of residential training at induction including classroom and field activities and field visits), follow-up training (about 2 days per year), and incentives to motivate farmer-trainers, such as contests, T-shirts, and bags. In Kenya, these costs amount to about US\$160 per farmer-trainer per year.<sup>6</sup> Some other costs, such as for inputs for demonstrations (roughly US\$20 per farmer-trainer per year), would occur in a conventional extension programme as well as a F2FE programme so are not included here. Wellard et al.<sup>7</sup> estimated costs of US\$400/farmer-trainer over a 4-year period.

### Strengths and weaknesses

**Strengths:** A survey of 80 organisations using F2FE in Cameroon, Kenya, and Malawi found that they valued the approach because it was low-cost, helped extension services expand their reach, and improved accountability to the community. Many also reported that farmers' command of local languages and culture helped promote uptake of new practices. Some reported that F2FE programmes also promote feedback on new practices to research and extension and help strengthen the capacity of communities to access information. As the approach is low-cost, it is often sustainable, with government extension staff or farmer organisations taking over the backstopping of farmer-trainers after a project ends. F2FE has the potential to improve feedback from farmers to extension staff.

**Weaknesses:** Farmer-trainers need coaching and technical backstopping; without these they may perform poorly. Some programmes appear to recruit more farmer-trainers than they are able to effectively backstop, reducing overall performance of the programme. If extension staff perceive farmer-trainers as a substitute, rather than a complement, to their own services, conflicts between farmer-trainers and extension staff may occur. Some programmes experience high drop-out rates, requiring extra training for new farmer-trainers. F2FE programmes may simply be an arm of a top-down technology transfer model, in which communication is one-way. Finally, as low-cost as F2FE programmes are, they may not be sustainable following the end of a project if no local institution agrees to support them.

5 Simpson et al. 2015. Op.cit.

6 Kiptot, E., Franzel, S. and Kirui J. 2012. *Volunteer farmer-trainers: improving smallholder farmers' access to information for a stronger dairy sector*. Policy Brief No. 13. Nairobi: World Agroforestry Centre. Available at: <http://www.worldagroforestry.org/downloads/publications/PDFs/PB12236.PDF>

7 Wellard, K., Rafanomezana, J., MNyirenda, M., Okotel, M. and Subbey, V. 2013. A review of community extension approaches to innovation for improved livelihoods in Ghana, Uganda and Malawi. *The Journal of Agricultural Education and Extension*, 19 (1): 21–35.

## Best-fit considerations

**For which target groups?** The approach is appropriate for a wide range of target groups, including women, youth, and the poor. It is particularly useful for increasing the proportion of women extension providers and women's access to extension services. In many places, extension services are able to recruit higher proportions of women farmer-trainers than women front-line extension staff. For example, in the East African Dairy Development Programme in Uganda, about one-third of volunteer farmer-trainers were women, while less than 5% of extension staff were women.<sup>8</sup>

**For which innovations?** F2FE is appropriate for a wide range of innovations but may not be appropriate for high-risk and very technical enterprises and practices (e.g. certain crop spraying practices), innovations where cost of an error may be very high (e.g. treatment of livestock diseases), or for what are essentially permanent decisions (e.g. siting of water control structures).

**In which ecological and institutional settings?** F2FE has been reported not to work well in areas of low population density where transportation is a constraint. It appears to work best where farmers are organised, that is, farmer-trainers are serving members of a farmer group or a producer organisation, as trainers then have a ready clientele. It may be less suited to high-income, commercial systems, where the opportunity cost of labour is high and social networks may be weak.

## Governance

The approach fits into a wide range of extension modalities such as private, government, NGO, and farmer organisations providing extension services. Extension services are generally the initiators of F2FE programmes and extension staff often supervise the farmer-trainers. The more that extension services facilitate ownership among local institutions (e.g. producer organisations, local government), the more sustainable the programmes are. They can do this through ensuring that local institutions participate, and even lead, in selecting farmer-trainers and monitoring and evaluating them.

The F2FE approach is widely adapted and used in combination with many other extension approaches. For example, contact farmers in the 'training and visit' approach and field-school leaders in the 'farmer field school' approach fall into the category of F2FE.

## Evidence of impact and potential scalability

Only one study was found documenting the costs and returns of a farmer-trainer programme. Wellard et al.<sup>9</sup> reported benefit–cost ratios ranging from 7-to-1 to 14-to-1 across four sites where Self Help Africa, an NGO, and local partners supported farmer-trainers in Ghana, Malawi, and Uganda. Several other studies show evidence of uptake of new practices promoted by farmer-trainers and evidence of community members' and development organisations' satisfaction with, and appreciation for, farmer-trainers. The rapid spread of the F2FE approach – most organisations using it in Cameroon, Kenya, and Malawi had adopted it only during the past decade – without backing of donors or international organisations is evidence of its demonstrated effectiveness in use.

There are many cases of the approach being scaled up successfully, e.g. the Malawi Ministry of Agriculture works with more than 12,000 lead farmers and the Peruvian Government, with 2,500 farmer-trainers (see Box 1).

## Issues of sustainability of the approach

Several factors appear to be associated with sustainability of F2FE programmes:

- **Ownership by local institutions.** For example, in western Kenya, farmer-trainers were actively training farmers three years after the project supporting them had ended. The main reason was that local village authorities were supporting and promoting the trainers.<sup>10</sup>
- **Understanding farmer-trainers' motivations and finding low-cost incentives.** Extension managers need to understand farmer-trainers' motivations to volunteer and to implement low-cost incentives to reward them, especially those not paid

### Box 1. Governments paying farmer-trainers: The way of the future?

In parts of Peru, F2FE has become the main delivery vehicle for extension. Peru's Yachachi (from *quechua* for 'one who teaches') programme reaches 90,000 of the country's poorest Andean farmers. In addition to being locally recruited and selected, these F2FE trainers are paid by the government via community-awarded innovation funds (no external funding is involved). They receive the equivalent of US\$340 per month for four days a week, which is 67% of an extension technician's salary). Women make up 25% of the 2,500 Yachichis. Training activities focus on a wide range of crop, livestock, and agroforestry practices. Importantly, the national agricultural research and innovation institute (INIA) and SENASA, the national phyto-sanitary service, provide ongoing training and support to Yachachis.

8 Franzel, S., Degrande, A., Kiptot, E., Kundhlande, G., Tsafack, S. and Simpson, B. In press. Does farmer-to-farmer extension increase women's participation and access to advisory services? Lessons from Kenya, Cameroon and Malawi. *Journal of International Agricultural and Extension Education*, in press.

9 Wellard et al. 2013. Op. cit.

10 Lukuyu, B., Place, F., Franzel, S. and Kiptot, E. 2012. Disseminating improved practices: Are volunteer farmer-trainers effective? *Journal of Agricultural Education and Extension*, 18:525–554. <http://www.tandfonline.com/doi/pdf/10.1080/1389224X.2012.707066>



for their services. In surveys in Cameroon, Kenya, and Malawi, knowledge and helping others were farmer-trainers' most important motivations, followed by social status and project material benefits (e.g. inputs for demonstrations). The offer of increased training opportunities is an important incentive. For those farmer-trainers, motivated by helping others and social status, contests, certificates, t-shirts, and community recognition are important. Others are motivated by the ability to earn income from activities associated with their

extension duties (e.g. selling seed from demonstration plots or providing training for a fee), which calls for consideration on how to build such opportunities into the design of F2FE programmes.<sup>11</sup>

- **Government policy support.** Governments support and pay farmer-trainers in Peru (Box 1) and Indonesia. In other countries, such as Malawi and Rwanda, governments do not pay farmer-trainers but do support them technically.

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 7, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the World Agroforestry Centre (ICRAF) and the Food and Agriculture Organization of the United Nations (FAO), with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

The views expressed in this publication are those of the author(s) and do not necessarily reflect the views or policies of the Food and Agriculture Organization of the United Nations.

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

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<sup>11</sup> Kiptot, E. and Franzel, S. 2014. Volunteerism as an investment in human, social and financial capital: evidence from a farmer-to-farmer extension program in Kenya. *Agriculture and Human Values*, 31: 231–243. Available at: <http://link.springer.com/article/10.1007%2Fs10460-013-9463-5>

# Farmer study circles

Sanne Chipeta, Charity Chonde, and Martin Sekeleti

## Introduction

The overall purpose of farmer study circles (FSCs) is to create learning, capacity, and empowerment among small-scale farmers. FSCs are part of a multitude of approaches to agricultural extension for groups of farmers that are based on adult learning principles. Such approaches are self-directed/autonomous, based on existing knowledge and life experiences, goal-oriented, relevant, practical, and collaborative.

## Philosophy and principles

FSCs are developed from the general concept of study circles (Box 1). The first study circles were founded in Sweden in 1912, and the approach has been applied worldwide, for example in the US Everyday Democracy movement<sup>1</sup>, the Australian Study Circles Network<sup>2</sup>, Bangladesh, study circles on HIV/AIDS for Swazi women<sup>3</sup>, and Zimbabwean study circles on community-based human rights<sup>4</sup>. Study circle methods and principles are also applied in related group approaches, such as the discussion groups used in Ireland by Teagasc (Agriculture and Food Development Authority); experience-sharing groups (*erfa* groups)<sup>5</sup> used by the Danish Agricultural Advisory Service; and farmer field schools<sup>6</sup>.

The basic idea of FSCs is to promote democracy, skills development, education, and access to information through the establishment of small groups of small-scale farmers who come together to learn and improve their skills on topics of common interest. In this way, farmers can discover their ability to change their lives through common study and action.

The principles of FSCs are:

- equality and democracy
- experience sharing and cooperation
- freedom and the right to set one's own objectives
- continuity, planning, and active participation
- use of study materials
- focus on action and change.

Farmer study circles differ from most other group methods in promoting self-governed groups of farmers who study on their own, without external facilitation other than mobilisation and provision of materials.

### Box 1. Study circles

A study circle is a small group of people with common interests who conduct voluntary studies on topics of their own choice. Together they are able to acquire new knowledge, and to scrutinise conditions and opportunities for developing their own society. Participants in a study circle learn from a combination of their peers' experiences and the technical and factual information obtained through all of their studies. This involves interaction, to which all participants contribute.

## Implementation

Depending on the context and purpose, FSCs may be implemented in various ways. Usually a network or organisation facilitates the mobilisation of a group and provides study material. The FSCs developed in Africa and promoted by We Effect are supported by farmer organisations. The steps involved in implementing an FSC through farmer organisations are as follows.

1. **Build awareness and capacity at all levels.** The preliminary steps within the farmer organisation are to sensitise the staff, train core and field staff, and train farmers to become FSC organisers.
2. **Mobilise groups of FSCs.** Farmer organisations implement FSCs through their existing local structures, such as information centres, cooperatives, and local area associations. The local structures choose representatives to be FSC organisers. The FSC organisers work in the community to encourage people to mobilise and form FSCs; facilitate the election of FSC leaders and orient them; distribute materials; and support activities. Once the FSC is formed, the group elects an individual to become the FSC leader, who takes responsibility for ensuring that everyone takes an active part in discussions.
3. **Choose the study topic.** Participants plan for themselves what and how they want to study, based on the FSC's principles.
4. **Access study materials.** The FSC leader distributes the relevant study materials to the group. The materials are obtained from the farmer organisation via the FSC organiser. Participants decide how to share, use, and keep the material.
5. **Promote action.** FSCs link the participants' acquired knowledge to action and change through experience

1 Everyday Democracy: <http://www.everyday-democracy.org>

2 Australian Study Circles Network: <http://www.studycircles.net.au>

3 Oliver, L.P. 1996. Study circles on HIV/AIDS for Africa: Swazi women gain a public voice. *Adult Education and Development* 47: 317–331.

4 Gweshe, E., Argren, R. and Mwanza, S. 2002. *Community based human rights study circles manual*. Avondale, Zimbabwe: Human Rights Trust of Southern Africa.

5 *Erfa* is an abbreviation of *erfaring*, the Danish word for experience.

6 Dhamankar, M. and Wongtschowski, M. 2014. Farmer Field Schools. Note 2. GFRAS Good Practice Notes for Extension and Advisory Services. Lindau, Switzerland: GFRAS.

sharing, hands-on practice, demonstrations, visits, common field activities, and field days.

6. **Produce study materials.** Learning materials may include booklets, radio<sup>7</sup>, or video. The supporting organisations develop study materials to support group learning, based on the farmers' requests.

### Monitor the results

The FSC organisers monitor results in the field in terms of how participants' lives have changed as a result of the FSC. They collect and consolidate information from the study groups' self-assessments and pass it on to the farmer organisation.

## Capacities required

### Institutional

Implementing an FSC requires a well functioning, visionary organisation from national to community level. This is important for planning the process and monitoring achievements, and for providing consistent supervision and support to the FSCs at field level.

Training materials are key to successful implementation as technical study materials support the FSCs with new information and learning. Staff and FSC organisers are guided through an implementation manual.

### Human

The capacity and selection of FSC organisers is critical. Field experience<sup>8</sup> shows that communities tend to select FSC organisers based on their good behaviour, citing criteria such as good literacy level, model farmer, sober, trustworthy, honest, and hardworking.

The FSC organisers are trained in:

- mobilising and forming FSCs
- orienting FSC leaders in conducting sessions and facilitating active group participation and learning
- monitoring, supervising, and supporting FSCs.

To date, FSCs have mostly used written materials, so it is important that participants are literate. However, this isn't always the case, and the FSC leader must be able to accommodate illiterate participants. Materials must be easy to read and presented in the local language. Discussions must include all participants and bring out their experiences and concrete solutions to problems.

## Costs

### Training and facilitation

Farmer study circles have few expenses. At the community level, FSCs are based on voluntary participation by both the

FSC leader and the participants. An FSC may require external technical support; for example, FSCs in Africa use the links and networks of farmer organisations and government extension services to obtain technical support.

The training of FSC organisers requires a venue and support logistics including transport, accommodation, an implementation manual, stationery, and meals. From the experience in southern Africa, training costs range from US\$120–150 per FSC organiser established. One study circle organiser will typically manage 5–10 FSCs each with an average of 10 members. An organiser managing more than five groups will need support for transport. In Africa, a good bicycle typically costs about US\$85–90.

### Production and maintenance of training materials

The most common format used is a printed booklet. There will be costs for writing the text, illustrations, graphic design, and printing. In southern Africa, developing and printing 2,000 copies of a booklet will cost in the range US\$6–10 per book. As the writing and layout are a one-off expense, reprinting is less expensive, at approximately US\$3–5 per book.

If an FSC organiser works with 10 FSCs, each with 10 participants, the approximate annual cost of starting and running an FSC is as low as US\$4–6 per participant.

## Strengths and weaknesses

An independent evaluation<sup>9</sup> of FSCs in Zambia and Malawi identified the strengths and weaknesses of FSCs listed in Table 1.

## Best-fit considerations

### Target groups

Different categories of farmers and other rural people from all over the world have benefitted from learning through FSCs. The experiences have been particularly good among small-scale farmers.

Farmer study circles are especially beneficial for rural women's participation and learning. As FSCs are self-directed, they address the particular needs of the participants, and women can learn and contribute without being subject to the male bias of conventional extension services. Women tend to appreciate the collaborative and practical way of working in an FSC<sup>10</sup>.

### Innovations and community action

The concept is action-oriented for problem-solving and innovation. Groups identify topics for study by identifying common problems. The materials promote new ways of addressing problems through innovation and community action, including the following.

7 In Malawi, FSCs have access to community farm radio programmes.

8 Nissen, J., Chonde, C. and Chipeta, S. 2014. *Evaluation of the We Effect study circle concept*. Danish Agricultural Advisory Service, Knowledge Centre for Agriculture.

9 Nissen et al. 2014. Op. cit.

10 Ibid.

**Table 1. Strengths weaknesses of FSCs**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Provides direct benefits to participants</li> <li>• Suitable for organisational development</li> <li>• Effective tool for member mobilisation for farmer organisations<sup>11</sup></li> <li>• Promotes dialogue and deliberations</li> <li>• Provides for social capital</li> <li>• Easy to understand</li> <li>• Strengthens a reading culture</li> <li>• Promotes action</li> <li>• Good for community mobilisation and training</li> <li>• Provides demand-driven access to information and learning</li> <li>• Very cost-effective</li> <li>• Strong tool for women's participation and engagement in learning</li> </ul>	<ul style="list-style-type: none"> <li>• May have a limited perspective</li> <li>• Benefits may be apparent only in the long term</li> <li>• Requires commitment to voluntarism</li> <li>• Requires a reading culture</li> <li>• Requires reading resources or materials in other media, in local languages</li> </ul>

- Links to financial services through group savings and loans associations; and to formal financial institutions such as banks in Zambia, and savings and credit cooperatives in Malawi, Kenya, and Uganda.
- Links to market services through forming produce-aggregation centres and selling in bulk. Similarly, input suppliers sell and deliver to FSCs, reducing the cost of doing business with individual farmers.

### Context

Generally, FSCs are most successful with homogenous groups of people in similar situations and with shared concerns. It may not be appropriate to introduce FSCs in contexts of highly hierarchical and authoritarian patterns, or in conflict-driven environments<sup>12</sup>, unless ways are found for collaboration of equal members as seen in women's FSCs in Bangladesh and in human rights work in Zimbabwe<sup>13</sup>.

### Governance

Farmer study circles are self-governed. The FSC organisers, leaders, and members are trained on principles of democracy, equality, and cooperation.

### Evidence of impacts, sustainability, and scalability

Experiences confirm that people working in small groups learn more quickly and reach insights that would have been unavailable to them if they were working alone. Outcomes include increased civic participation and democratic practices, political participation, social change, and self-help activities.

In southern Africa, the implementation of FSCs is monitored in terms of productivity and incomes. The most significant

results<sup>14</sup> are described below, along with evidence of outcomes and impact from an independent evaluation in Malawi and Zambia<sup>15</sup>.

### Improvement in incomes and livelihoods

Participants in FSCs showed 20% improved production and productivity, and 50% improved incomes and livelihoods.

Through FSCs, participants improved the health and nutrition status of their families.

Non-members also benefit from FSCs. For example, information centres built for FSCs also serve as libraries for communities, and some of the income generated from the FSCs is used to support orphans, the elderly, and people affected by HIV/AIDS.

### Social change and member empowerment at individual and FSC levels

Participants improve their public speaking skills, and FSCs effectively disseminate information on rights and policy issues and provide participants with a stronger voice in influencing policies or improving rights. Farmer study circles may raise issues and feed these into mainstream organisations for lobbying and advocacy, to influence both the local government agenda and central government policies.

Farmer study circles are a vehicle for further change as members transfer their knowledge and democratic behaviour to other systems of community collaboration. They may also offer adult literacy classes, and there are FSCs on HIV/AIDS that provide a public voice for rural women<sup>16</sup>.

<sup>11</sup> For example, the Cotton Association of Zambia increased its membership from 5,000 to 24,000 members through the introduction of FSCs.

<sup>12</sup> For example, as indicated by experiences of Chilean trade unions.

<sup>13</sup> Gweshe et al. 2002. Op. cit.

<sup>14</sup> We Effect. 2015. 'Internal rural development results assessment 2015', unpublished report.

<sup>15</sup> Nissen et al. 2014. Op. cit.

## Gender equality at household and community levels

Women experience empowerment both in their households and at community level. They voice their opinions and concerns in the presence of men. Women also practise this behaviour in their households, where they communicate more freely. With an improved economic situation and literacy levels obtained through participation in FSCs, women may take part in decision-making and control the resources in their houses and communities.

## Realising the power of knowledge for innovation

The methodology promotes the sharing of both indigenous and scientific technical knowledge systems. Participants in FSCs have been able to innovate using locally available resources. In Malawi, women participants shared ideas on producing compost manure, built a raised goat-house, and constructed a clay stove to reduce the amount of firewood used for cooking. Women FSC participants from the Zambia Honey Council made clay/straw beehives as they could not afford wooden beehives.

## Unintended effects

Farmer study circles were originally intended to be temporary and to dissolve when the group had finished studying the selected topic. The reality, however, is that FSCs stay together for many years and continue studying new topics<sup>17</sup>. Partner organisations support the permanent structure and see FSCs as important in their organisation at grassroots level.

## Sustainability

Farmer study circles build sustainable capacity in communities, resulting in long-term empowerment and social transformation. Participants are able to sustain the activities and take the resulting innovations into sustainable actions such as savings and loan groups, small-scale businesses, and market initiatives.

Farmer networks and associations have emerged as a follow-up effect, and these units allow small-scale farmers to access more lucrative markets.

## Dos and don'ts

Table 2 summarises recommendations by organisations that have successfully implemented FSCs.

## Training materials

Australian Study Circles Network: [www.studycircles.net.au](http://www.studycircles.net.au)

eLearning Industry – 6 Top facts about adult learning theory: [elearningindustry.com/6-top-facts-about-adult-learning-theory-every-educator-should-know](http://elearningindustry.com/6-top-facts-about-adult-learning-theory-every-educator-should-know)

Everyday Democracy – Resources for changemakers: [www.everyday-democracy.org/resources](http://www.everyday-democracy.org/resources)

<sup>16</sup> Oliver 1996. Op. cit.

<sup>17</sup> Nissen et al. 2014. Op. cit.

Table 2. What works for successful application of FSCs

Do:	Don't:
Carefully train promoters, organisers, and FSC leaders to encourage equality and democratic processes	Make FSC organisers and leaders 'dictators'
Promote FSCs for 10–20 participants	Have groups smaller than 10, which makes an FSC vulnerable and too small to ensure adequate inspiration Have groups larger than 20, which makes group processes too complicated
Promote homogenous groups in terms of wealth, power, education, and gender in communities with strongly unequal power systems	Promote FSCs with big inequalities in terms of power and voice
Insist on self-direction/governance	Interfere with the FSC's decisions about topics and activities
Provide support for monitoring and backstopping	Promote FSCs where there is inadequate capacity for monitoring and supervision in the support organisation
Facilitate links to service providers and market actors, and enable FSCs to make their own contacts and demands	Provide grant support, except for purchase of technical services
Develop study materials based on requests by FSC participants	Plan services on behalf of FSCs
Provide study materials in non-academic, simple, action-oriented form	Plan and develop materials that have not been requested
Provide study materials in vernacular languages	Provide theoretical materials in scientific language

Participedia – Study circles:

[participedia.net/en/methods/study-circles](http://participedia.net/en/methods/study-circles)

Sekeleti, M. 2015. *Study circle implementation manual*. 2nd edn. Lusaka: We Effect Regional Office Southern Africa

This content was originally published in September 2016 as GFRAS Global Good Practice Note 20, available to download at <http://www.betterextension.org>.

This note was produced by We Effect with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM or CGIAR.

# Farmer field schools

Mona Dhamankar and Mariana Wongtschowski

## Introduction

Farmer field schools (FFS) is a group-based adult learning approach that teaches farmers how to experiment and solve problems independently. Sometimes called “schools without walls”, in FFS groups of farmers meet regularly with a facilitator, observe, talk, ask questions, and learn together. Farmer field schools as an approach was first developed to teach integrated pest management (IPM) techniques in rice farming, but it has also been used in organic agriculture, animal husbandry, and also non-farm income generating activities such as handicrafts.

FFS were originally used in the late 1980s by FAO with rice growers in Indonesia. The participants were selected based on their ability to read and write and to participate in discussions and analysis. Eventually, the program for rice was carried out in 12 Asian countries and gradually expanded to include new commodities such as vegetables, cotton, and other crops. This experience was further used to adapt and institutionalize FFSs in more than 90 countries of the world.

## Philosophy and principles

The FFS approach is based on the fact that the best learning takes place by doing, rather than telling. The facilitator does not lecture the farmers, but helps them to learn by asking questions and building on their experience and observations. Farmers are encouraged to make their own discoveries and

## Key FFS principles

- Learning by doing – adults learn better through experience rather than passive listening at lectures and demonstrations.
- Every FFS is unique, as far as content is concerned: Farmers decide what is relevant and what FFS should address.
- Learning from mistakes – each person’s experience of reality is unique and valid.
- Learning how to learn – farmers build their capacity to observe, analyse, and make conscious decisions.
- Problem posing/problem-solving – problems are posed as challenges not constraints.
- Farmers’ fields are the learning ground – the field – crop or livestock production system – is the main learning tool.
- Extension workers are facilitators not teachers – because their role is to guide the learning process.
- Unity is strength – farmers in a group have more power than individual farmers.
- All FFS follow a systematic training process – key steps are observation, group discussion, analysis, decision-making, and action-planning.

Source: Groenweg, K., et.al. 2006. *Livestock farmer field schools: Guidelines for facilitation and technical manual*. Nairobi: ILRI.



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draw conclusions. As an extension approach, FFS differs from the traditional, top-down “transfer of technology” method. Farmers interact with researchers to ask for help only when they cannot solve a problem by themselves.

Most FFS projects aim to provide training in skills to improve agricultural production, but of late there is an increasing trend to reorient FFS to include empowerment objectives. Some projects have also included other objectives such as reducing gender inequality, targeting minority groups, community development, and strengthening producer groups.<sup>1</sup> Over the years, the scope of the FFS approach has expanded beyond agriculture/IPM to include issues such as water management, household livelihood security, improved access to public information by farmers, marketing networks, water and sanitation, and rural infrastructure development. Therefore, although it originates from agriculture, the FFS approach is fundamentally a participatory group approach for collective action and social mobilisation by the local community.<sup>2</sup>

## Implementation

A typical FFS consists of 8-12 weeks of hands-on farmer experimentation and non-formal training during a single-crop growing session. Farmers are expected to attend weekly classes over one growing season. For arable crops and/or tree crops, meetings may be held fortnightly. For livestock, FFS groups meet for a full year – one 4-hour session per week – making implementing medium-term field experiments related to livestock issues, especially breeding and feeding of cattle, easier.

There are several preparatory steps leading up to the implementation of an FFS:

1. **Identifying the focus of the FFS:** This is the most critical step in preparing for a FFS activity. It is important to spend sufficient time on this in order to avoid involving farmers in

activities that are not of interest to them. The selection of the FFS activity depends on farmers’ needs, interests, and the problems that they are currently facing.

2. **Identifying participants and forming the learning group:**

Depending upon the focus of the FFS activity, identify around 30-40 farmers who share a common concern or interest in the topic<sup>3</sup>. They must be able to attend all sessions, and willing to work together as a team and share ideas. Selecting more numbers of farmers initially helps as the group is likely to shrink after the first few sessions. It is also okay to select already-established groups like self-help groups, youth, and/or women’s groups. The facilitator’s familiarity with the history of the community, its cultural practices, gender relations, and potential areas of conflict are important elements in the selection process. Groups may consist of only men, only women, or mixed gender depending upon the culture and topic. The participants must be willing and capable of contributing financially or in material inputs, if required.

3. **Identifying the learning site:**

Any FFS requires a location to hold meetings and a study object i.e. a field or an animal. The site and/or the animal must be suitable for the FFS activity in a given season and must be representative of the problems in the area. It must be easily accessible, and ideally the farmer owning the plot or animal should be present for most of the time in the FFS sessions.

4. **Training of facilitators:**

The role of a facilitator is central to the FFS process. Each FFS needs a facilitator who takes participants through a series of hands-on exercises. Because it is not a typical extension approach, facilitators must undergo a special two to three week training program. Facilitators can be extension staff of government or nongovernmental organisations, private companies, or graduates of a previous FFS.

### Typical FFS session in the original Indonesia programme:

- 8.00** Opening (with a prayer where applicable); Attendance; Introduction to day’s activities.
- 8.30** Go to field in small teams; Make observation, take notes. Facilitator points out new developments.
- 9.30** Return to shade. Begin making agro-ecosystem analysis, drawing and discuss management decisions.
- 10.15** Each team presents results and the group arrives at a consensus on management needs for the coming week.
- 11.00** Tea/ Coffee break
- 11.15** Energiser or group-building exercise
- 11.30** Special study topic or second crop/ livestock study. This could include nutrition, or chicken, or parasites, or something else of special interest to the group.
- 12.30** Closing (often with prayer)

Source: Gallagher, K. 2003. *Fundamentals of a Farmer Field School*. LEISA Magazine.

1 Waddington, H. and Howard White. 2014. Farmer field schools: from agricultural extension to adult education .Systematic Review Summary 1. London, International Initiative for Impact Evaluation.

2 Jayashantha, D.L Chamila and Puvanewary Ponniah. (2013). Strengthening rural governance: Farmer field schools as a strategy to build human capital in conflict affected Jaffna District of Sri Lanka. CARE International. Available: [http://www.napsipag.org/pdf/D\\_L.pdf](http://www.napsipag.org/pdf/D_L.pdf)

3 Groeneweg, K. et.al. (2006). Livestock farmer field schools: guidelines for facilitation and technical manual. International Livestock Research Centre: Nairobi, Kenya. p.1-11.

5. **Developing the curriculum:** Once the FFS group is formed, the facilitator develops the curriculum based on the main problems identified by the group. Together with the group, the facilitator decides which activities to take up in order to further explore the problems, test the solutions, and identify what kind of help/ resources are needed. FFS follows the natural cycle of its subject, be it a crop (seed-to-seed), or livestock (egg-to-egg), soil, or handicrafts. Key activities include agro-ecosystem analysis, field comparative experiments, group discussion, and learning exercises. Sometimes field visits to other FFS sites might also be included. Each activity is well structured, i.e. has a procedure for action, observation, analysis, and decision-making. The emphasis is not only on “how” but also on “why”. This helps to cover all aspects of the subject and link up with what is happening in the farmer’s own field so that the lessons learnt can be applied directly. If the curriculum is not sufficiently tailored to suit the needs and resources of farmers, they are likely to lose interest.

### Capacities required

The effectiveness of FFS depends largely upon the facilitator’s role and attitude. S/he is expected to encourage participants to ask questions and reach their own conclusions. It helps if the facilitator has farming experience. More than technical knowledge or higher educational degrees, it is important for facilitators to have good leadership skills, the ability to listen, be sensitive to group dynamics, and be well versed with participatory techniques<sup>4</sup>. In order to hone their skills, it is recommended that each facilitator guides at least three FFS per year.

In the longer term it is desirable to have a team of farmer facilitators who have the advantage of knowing the community and the area well, and are likely to be accepted better by other farmers who speak their local language. Moreover, being local, they require less transportation and financial support, and can operate independently. Farmers who are interested in becoming facilitators can be identified in course of the FFS process. These “FFS graduates” are usually given special farmer facilitator training of 10-14 days to improve their technical knowledge and develop organisational and facilitation skills.

### Costs

Typically most FFS have been implemented through externally-funded programmes that cover the costs of facilitator training,

curriculum development, running field schools, field days, supervision, and snacks for farmers attending.

Costs of FFS projects vary according to setting and content. As in most extension programmes, transport is one of the biggest costs. In 1996-97 the cost of an FFS facilitated by a professional extension worker in Indonesia was US\$532, which covered the facilitator’s honorarium, preparation and coordination expenses, transport, materials/inputs, stipends (of around US\$0.43 per session), refreshments for participating farmers, compensation for the farmer providing the experimental field, and field day expenses<sup>5</sup>. In the recent years, the cost per participant is reported to be around US\$20-40 per participant. This does not include the cost to participants for attending the FFS and may vary according to the crop and country.<sup>6</sup> In Eastern Africa, where self-financed (revolving fund) and semi-self-financed (with a grant) FFS are in place, farmers share costs and contribute towards continuity and sustainability by using commercial plots to repay loans to run the schools beyond third-party funded projects<sup>7</sup>.

### Strengths and weaknesses

Like all other extension approaches, FFS also has certain advantages and problems when it comes to what it can and cannot do<sup>8</sup>.

- **Format:** The informal and participatory nature of FFS programmes with built-in group dynamics and team building exercises makes it a good entry point for discussion on broader livelihood issues. FFS might not be efficient if used only for increasing yields through “message delivery” or for demonstrating a technology.
- **Strengths:** FFS activities rely more on farmers’ own discovery and reflection – so there is no risk of farmers not trusting extension workers due to ineffectiveness of incorrect/blanket recommendations. Moreover, the learning capacities built in FFS can be applied in other problem-solving situations in different contexts. FFS provides opportunities for farmer-to-farmer extension and can reduce farmers’ dependence on formal extension systems.
- **Participation:** FFS can help strengthen social capital at the local level. FFS processes help to build self-confidence – especially for women farmers – and the schools can be a good platform for vulnerable farmers to come together for collective action. Nevertheless, the intensive and demanding

4 Waddington, H. and Howard White. 2014. Farmer field schools: from agricultural extension to adult education. Systematic Review Summary 1. London, International Initiative for Impact Evaluation. p.15.

5 Braun, A. R. (1997) in Braun, A.R., et.al. 2000. Farmer field schools and local agricultural research committees: complementary platforms for integrated decision making in sustainable agriculture. AGREN Network Paper No.105. London: ODI-Agriculture Research & Extension Network.

6 Waddington, H. and Howard White. 2014. Farmer field schools: from agricultural extension to adult education. Systematic Review Summary 1. London, International Initiative for Impact Evaluation. p.23.

7 Anandajayasekeram, P., et.al. 2007. Farmer field schools: an alternative to existing extension systems? Experience from Eastern and Southern Africa. Journal of Int’l Agri. and Ext. Edu. V 14(1), p.81-93.

8 Adapted from Braun, A. et.al. (2006). A global survey and review of farmer field school experiences. ILRI, Nairobi, Kenya. Available: <http://intranet.catie.ac.cr/intranet/posgrado/Met%20Cual%20Inv%20accion/MCIAP2010/Semana%203/DocumentosSem310/Review%20of%20FFS%20Braun%202006.pdf>

nature of FFS activities can make participation of vulnerable households including women-headed households difficult.

- **Sustainability:** Some programs pay farmers for attending but that is likely to affect the longer term sustainability of FFS as an extension approach.
- **Impact:** While FFS shows positive impact on knowledge and productivity locally, it has been difficult to link it to diffusion of improved farmer practices at a wider scale. There is evidence to show that FFS graduates and FFS groups may or may not stay together in the longer term.
- **Cost effectiveness:** One of the major challenges of justifying FFS as a form of public investment in farmer education has been determining the cost effectiveness of FFS. FFS are criticised for being labour-intensive with relatively high programme and travel costs and limited outreach, i.e. only a small number of interested farmers. A key outcome of FFS is farmers' empowerment, which is difficult to quantify and measure. Although they mostly depend on external funding, some East African countries have successfully tried out self-financed FFS programmes.

## Governance and management

At the local level, existing organisations and self-help groups can be a good entry point for FFS activities, provided the members are willing to invest time. In most contexts, FFS graduates have showed willingness to organise themselves into networks or associations while some have integrated into existing organisations. For instance, in Uganda's national extension programme (NAADS), FFS are well integrated into the District Farmer Fora. This has provided an excellent institutional framework for taking up agriculture development.

## Potential impact

The main challenge when defining impact of the FFS approach is to decide whether it results in higher knowledge about complex issues, and/or whether the knowledge outcomes in turn translate into greater productivity and yields. Most available impact studies refer to IPM-related outcomes in terms of changes in pesticide use and yields. Broadly speaking,

based on qualitative evidence coming from small scale pilots, participation in FFS has shown improvement in farmers' knowledge of farming technology, confidence with problem-solving, and better decision-making skills. Some other studies support the view that participation in FFS empowered farmers and improved collaboration towards collective action.

## Training materials

SUSTAINET EA. 2010. Technical manual for farmers and field extension service providers: Farmer field school approach. Nairobi: Sustainable Agriculture Information Initiative.

Groeneweg, K. et.al. (2006). Livestock farmer field schools: guidelines for facilitation and technical manual. International Livestock Research Centre: Nairobi, Kenya.

## Further reading

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Braun, A. R. 2000. Farmer field schools and local agricultural research committees: Complementary platforms for integrated decision making in sustainable agriculture Vol. No.105. London: ODI-Agriculture Research & Extension Network.

Davis, K. 2006. Farmer Field Schools: A Boon or Bust for Extension in Africa? *Journal of International Agricultural and Extension Education* 13(1): 91-97.

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This content was originally published in July 2014 as GFRAS Global Good Practice Note 2, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the Royal Tropical Institute (KIT) with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# Community knowledge workers for rural advisory services

*Festus O. Amadu, Paul E. McNamara, Kristin E. Davis, and Lulu Rodriguez*

## Introduction

Many see rural advisory services (RAS), also called 'extension', as indispensable in efforts to improve agricultural production in smallholder farms in developing countries. However, development specialists have lamented that, bogged by infrastructural and logistical challenges, traditional RAS, such as the old 'training and visit' systems, have mostly failed to reach rural smallholder farmers.<sup>1,2</sup> In these traditional systems, the extension agent–farmer ratio is typically very low.

Higher agent–farmer ratios are critical, especially given the renewed global focus on sustainable, climate smart agriculture. Effective RAS could enhance the resilience of smallholder farmers, who are most vulnerable to production shocks resulting from socioeconomic, climate, and environmental catastrophes.<sup>3</sup>

New RAS approaches that complement traditional systems are thus being explored and pilot-tested in many countries. One of these, the community knowledge workers (CKW) approach, which started as part of the Grameen Foundation's economic development outreach to rural communities in the developing world, has been tried in Uganda and elsewhere. It entails fielding CKWs who reside and work in clientele communities to expand the reach of extension workers. For example, under the Uganda traditional RAS system through the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) extension agents serve between 3,000–9,000 households across 15–40 villages within a 50–300 km radius. On the other hand, a CKW serves 500–900 households across 4–6 villages within a radius of 5–10 km.<sup>4</sup> Because the CKWs are community members themselves, they can help in providing feedback on community perspectives to decision-makers.

## The CKW approach

The CKW system, a type of farmer-to-farmer extension, involves local networks of farmer-to-farmer peers serving as information intermediaries. They use smartphones and other information

and communication technologies (ICTs) to reach fellow farmers with agricultural (livestock management, agronomic practices for crops), weather (seasonal and daily forecasts), and market price information. Their smartphone connects to a remote server called Salesforce, which provides access to real time agriculture, market price, and weather information.

As community members, CKWs incur little transaction cost in delivering RAS within their communities. They are relatively efficient in reaching farmers in remote areas because of their familiarity with their zones of influence. They provide advisory services to individual farmers as well as farmers' groups, thereby expanding the scope of knowledge sharing considerably.

## Philosophy and principles

The CKW approach puts in motion the 'last mile' principle, which takes RAS to farmers and households that are difficult to reach. CKWs bridge the usual RAS delivery gap because they are integral members of the communities they serve. Scholars have bemoaned that traditional systems often prioritise and thus benefit mainly farmers with larger farm sizes. This may be because many smallholder farmers usually have holdings scattered across difficult terrains, which traditional agents find difficult to visit.

CKWs operate in different parts of the world, including sub-Saharan Africa (Ghana, Kenya, and Uganda), Latin America (Colombia and Guatemala), Asia (China, India, and Indonesia), the Middle East, and Northern Africa. Although they are called different names in different countries (e.g. they are known as *líderes productores* or production leaders in Colombia),<sup>5</sup> the core principle of reaching the last mile remains the same.

CKWs work in partnership with other organisations, known as service partners. Operational arrangements with these service partners vary depending on the setting. For instance, in Guatemala, an organisation called *Creceer* coordinates

1 Gautam, M. and Anderson, J.R. 1999. *Reconsidering the evidence on returns to T&V extension in Kenya*. Washington, DC: World Bank.

2 Kahan, D.G. 2007. *Farm management extension services: A review of global experience*. Agricultural Management, Marketing and Finance Occasional Paper 21. Rome, Italy: Food and Agriculture Organization of the United Nations.

3 Davis, K., Babu, S.C. and Blom, S. 2014. *The role of extension and advisory services in building resilience of smallholder farmers*. International Food Policy Research Institute 2020 Conference Brief, 13. Washington DC: IFPRI.

4 Grameen Foundation. 2013. *A digital revolution in agricultural extension – the CKW initiative*. Available at: <http://static1.1.sqspcdn.com/static/f/752898/22436303/1365792223147/community-knowledge-workers-ict4d 2013.pdf>

5 Grameen Foundation, 2013. Op. cit.

CKWs, who then train farmers' groups on how to meet value chain requirements. In Kenya, where CKWs are called Village Knowledge Workers, they work in partnership with Farm Concern International, a market development and smallholder commercialisation organisation. Among other services, these village knowledge workers help farmers store their crops and provide them with access to market price information and to financial institutions that offer advanced payments for their harvests.

### Implementation: The Ugandan experience

The CKW approach, which has been replicated in other countries, started in Uganda where CKWs worked with different service partners, including the East Africa Dairy Development (EADD) project, MTN-Group, National Agricultural Research Organisation (NARO), Uganda Department of Meteorology (UDoM), and Makerere University. In this set-up, the NARO and Makerere University serve as major providers of crop and livestock information, while UDoM provides seasonal weather information.

CKW smartphones contain three major apps – CKW Search, CKW Pulse, and CKW Survey (now called TaroWorks). CKW Search is used most frequently to look for agricultural, weather, and market price information in the phone's databases.<sup>6</sup> CKW Pulse is used to communicate directly with support specialists at the CKW headquarters, to access monthly targets, and monitor individual progress. Data collection or surveys are done using TaroWorks.

TaroWorks and the CKW Search app both function online and offline. Thus, in remote locations without cellphone coverage, CKWs can perform searches or track farmers' activities offline. Information generated offline is cached and later transmitted to Salesforce when the CKW comes within cellphone coverage.

CKWs are complemented by government field extension officers at the district level and call centres at the headquarters. Farmers can request additional information from call centres by speaking directly to experts. Thus, the CKW approach supports two-way information flows between farmers and experts. This feedback loop helps determine the types of information to be included or updated in the apps.

Implementation usually involves the following steps:

1. **Identification of districts and potential service partners.** In most cases, CKW roll out to new communities depends on the availability of service partners who often use CKWs to conduct surveys and other data collection activities.



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After suitable districts and partners are identified, farmers' groups are mobilised in each designated operational community. Each group is briefed on the potential role of a CKW within its service sphere and what the community expects of them.

2. **Peer nomination.** Community members nominate candidates from farmers' groups based on key requirements, including basic education, leadership potential, residency in the community, trustworthiness, enthusiasm towards innovations or new ideas, and willingness to devote 10 or more hours per week to RAS. The sponsoring agency and community leaders vet the nominees for training.
3. **Training.** Potential CKWs are trained for an average of 4 weeks, usually divided into the following phases: (1) developing proficiency in the use of the smartphone and its apps, (2) understanding the use of content such as information on specific value chains and good agricultural practices, and (3) use of monitoring and evaluation tools.

CKWs are usually paid per month based on monthly performance targets, which vary. For example, in Uganda, each CKW is expected to conduct 48 or more searches, register 15 or more new farmers into the service, and conduct

6 Campenhout, B.V. 2013. *Is there an app for that? The impact of community knowledge workers in Uganda*. International Food Policy Research Institute, Discussion Paper No. 1316. Washington, DC: IFPRI.

7 Grameen Foundation. 2009. *Grameen Foundation expands technology program for poor farmers in Uganda*. Available at: <http://www.grameenfoundation.org/grameen-foundation-expands-technology-program-poor-farmers-uganda-0>

8 or more surveys. Those who meet monthly targets receive about UGX60,000 (Ugandan Shillings), which is equivalent to approximately US\$24 per month.

### Capacities required

CKWs need little technical capacity apart from basic English (the apps and their content are in the English language) and proficiency in the use of mobile phones. The functions include managing daily data transmission to Salesforce and handling the power toolkit devices that go with the smartphone.

### Costs

A CKW operation involves costs for launching and maintaining the cloud-based server to support field operations, data management, and performance monitoring. Costs vary greatly depending on context and activity, ranging from thousands to millions of US dollars. For example, the Uganda operation initially cost around US\$4.7 million, which was supported by a grant from the Bill & Melinda Gates Foundation in 2009.<sup>7</sup> Other costs include the monthly pay for CKWs (about US\$24 per worker), the operation of call centres (about US\$10,000 per month), and other administrative costs.

### Strengths and weaknesses

Table 1 outlines the strengths and weaknesses of the CKW approach.

### Best-fit considerations

**Target groups:** CKWs serve smallholder farmers in rural areas where poor road networks and limited infrastructure often prevent traditional RAS agents from visiting. While conventional RAS often ignore clients with scattered farm holdings, CKWs are able to reach even remote areas. In

Uganda, CKWs receive bicycles, smartphones, and solar power equipment on loan, which they pay for over time. They usually get around by walking or cycling along narrow paths to and from farmers' fields. Thus, CKWs are likely to create greater impact among smallholders, including pastoralist farmers.

**Target innovations:** The CKW approach is suited for ICT-supported delivery systems that depend on real-time information sharing. These ICTs help CKWs link farmers to agricultural value chains (e.g. maize, coffee, and bananas in Uganda).

**Ecological and institutional setting:** CKWs can work in all agricultural ecologies. However, they are most useful in serving farmers in remote terrains that traditional extension workers find difficult to reach.

### Governance

Governance arrangements are context-specific. For example, in Uganda, the sponsoring agency and the community that selects CKWs jointly decide on how the system is administered and managed. In Ghana, where CKWs perform a different type of service (healthcare), they are linked with the government health services. In Latin America, the Middle East, and Asia, CKWs work with private entities for RAS and financial service delivery.

In general, community participation in worker selection makes CKWs accountable to their communities. For instance, in Uganda, CKWs are required to allocate a minimum of 10–15 hours per week for RAS activities. Sponsoring agencies and operational partners provide incentives by ensuring that CKWs perform valid searches for farmers and upload queries to Salesforce.

**Table 1. Strengths and weaknesses**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Low level of education required (basic literacy) makes it adaptable to many rural settings</li> <li>• Central coordination of messages and content through the cloud-based server helps validate information</li> <li>• Short training duration makes it faster to setup and provide RAS to communities</li> <li>• Farmers do not need cellphones to receive information; only the CKW uses the smartphone to provide advice</li> <li>• Performance-based incentives are attached to the number of successful queries made, motivating CKWs to widen community outreach</li> <li>• Community respect serves as incentive for good performance. Peer-to-peer learning is facilitated through social interaction</li> <li>• CKWs earn extra cash by charging community members' mobile phones</li> <li>• Top performers are 'incentivised' with extra cash by getting picked to perform special services (e.g. surveys)</li> </ul>	<ul style="list-style-type: none"> <li>• Initial cost to set up the data management system might be prohibitive for small-scale enterprises</li> <li>• The cloud-based server requires topnotch technical monitoring and coordination capacity that might be lacking in many rural communities</li> <li>• The short initial training might limit agents' performance. In Uganda and Ghana, most agents need longer training on the interactive voice response system on cellphones</li> <li>• Community members might nominate popular members who lack the right motivation for RAS</li> <li>• Performance metrics tied to the number of monthly CKW searches disregard the quality of service to farmers</li> <li>• Reliance on service partners may limit outreach. For example, in Uganda, CKW operation in the Massaka District ceased when the key partner, EADD, closed in 2013, forcing CKW layoffs</li> <li>• Over-reliance on donor funding and support for continuity</li> <li>• CKWs may be motivated more to repay the cellphones and bicycles given to them on credit than provide high quality service to farmers</li> </ul>

## Sustainability

CKW roll out to new communities is usually sandwiched by Progress out of Poverty Index (PPI) surveys, which help identify the most economically vulnerable communities for engagement. After roll out, PPI helps track CKW impact based on key indicators such as nutritional status of households.

Maintaining feedback loops between community members and CKWs helps to guide implementation and to identify necessary areas of adjustment. The Uganda CKW programme underwent such an adjustment when it was restructured in 2014 (from about 1,100 agents working in 35 districts to only 300 agents covering 3 districts) to enhance efficiency. To compensate for the workforce reduction, each CKW now trains 50 lead farmers who in turn are asked to serve 10 other farmers in the community. The new programme is called CKW 3.0, indicating its emphasis on three value chains (coffee, maize, and banana) across 3 districts.

## Evidence of impact

CKWs have made significant impacts wherever they are found. For example, Uganda reported that CKWs had improved RAS outreach to 289,000 farmers across 22,000 villages in over 35 districts (about 40% of the country) by 2014. In Colombia, CKWs have organised some 563,000 rural coffee farmers into effective coffee producing value chains. The Indonesian CKW programme, Ruma, reportedly reach over a million clients.<sup>8</sup>

Although an earlier analysis<sup>9</sup> of CKW impact in Uganda found no significant effect on the productivity of maize, it showed evidence that CKWs positively influenced farmers' decisions to cultivate more profitable crops.

## Further reading

Simpson, B.M., Franzel, S., Degrande, A., Kundhlande, G. and Tsafack, S. 2015. *Farmer-to-farmer extension: Issues in planning and implementation*. Modernizing Extension and Advisory Services (MEAS) Technical Notes. Urbana, IL: MEAS. Available at: <http://www.meas-extension.org/meas-offers/technical-notes>

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 14, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the University of Illinois, with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

<sup>8</sup> Grameen Foundation. 2014. *Annual report, 2013–2014: Breaking the cycle*. Available at: <http://www.grameenfoundation.org>

<sup>9</sup> Campenhout, 2013. Op. cit.

# Rural resource centres: a community approach to agricultural extension

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## Introduction

In a rapidly changing world, farmers need a package of innovations and services, in addition to continuous access to knowledge and information. Having all this under one roof and in a rural setting can greatly accelerate adoption of innovations and increase benefits to farmers.

Farmer training centres have been initiated by many actors, under different forms; for example, Maisons Familiales Rurales,<sup>1</sup> Songhai Centres,<sup>2</sup> and Agribusiness Development Centres. These initiatives focus on training young individuals and preparing them for a career in agriculture. However, they are less useful in serving the wider farming community for large scale adoption of agricultural innovations. Therefore, new models of community-based extension are under development, such as the 'Small Farm Resource Centre' approach promoted in South Asia by ECHO<sup>3</sup> and the 'Rural Resource Centre' concept, further described in this note.

Agroforestry<sup>4</sup> requires specific attention from extension because it is knowledge intensive, highly context-specific, and provides benefits in the long term. Therefore, the World Agroforestry Centre (ICRAF) has been developing rural resource

centres (RRCs) since 2006; first in Cameroon,<sup>5</sup> and later in Burkina Faso, the Democratic Republic of Congo, Mali, and Nigeria. This good practice note uses the RRC experience to demonstrate how a community-based extension approach can complement public-run agricultural extension so that local realities are taken into account and to better meet farmers' expectations.

## Philosophy and principles

What are RRCs? RRCs are training and demonstration hubs that are managed by grassroots organisations and often operate outside the formal extension model. They create opportunities for farmers to share experiences and to receive technical guidance and services that are tailored to their livelihood needs. Emphasis is put on access to knowledge, interactive learning, and networking among farmers and between farmers and other actors. Farmers are encouraged to learn how to do their own testing, adopt successful technologies, and extend them to their fellow farmers. A 'typical' RRC comprises of a tree nursery, demonstration plots, a training hall, a small library, and office spaces. Accommodation, catering facilities, and agricultural processing units may also be part of the RRC depending on available resources, opportunities, and needs.

Roles and services of RRCs? RRCs provide a multitude of services and products (Box 1). In Cameroon, farmers value the training, information, and awareness-raising role of RRCs the most, followed by technical assistance. Young people in particular also expect RRCs to play an active role in rural development in general.

How are RRCs different from other extension approaches? Compared to public-run agricultural extension systems, RRCs have the following advantages: greater accessibility, increased relevance of innovations thanks to a technology evaluation and adaptation process, better quality of services, relatively high number of women and youths reached, and better networking with other rural actors. Moreover, activities are not necessarily limited to agriculture, but may include other socio-environmental development aspects such as: infrastructure development projects, watershed management, citizenship,

1 <http://www.mfr.asso.fr/mfr-dans-le-monde/pages/les-mfr-dans-le-monde.aspx>

2 <http://www.songhai.org/index.php/en/home-en>

3 <http://www.meas-extension.org/meas-offers/case-studies/sfrc-asia>

4 Agroforestry is the deliberate introduction or retention of trees on farms to increase, diversify, and sustain production for increased social, economic, and environmental benefits.

5 <https://www.youtube.com/watch?v=Ymlf7Mir1sQ>

### Box 1. Key services provided by rural resource centres

- Seeds, seedlings, and other inputs
- Training of farmers in areas such as nursery practices, tree propagation, soil fertility management, group dynamics, financial management, book-keeping, and marketing
- Information on new technologies and innovations
- Links with market actors, particularly the private sector
- Access to market information and micro-finance opportunities
- Forum for exchange of information among farmers, and between farmers and other stakeholders

local governance, community empowerment, etc. Their major advantage, however, is that they are rooted in a local context and have gained farmers' confidence, so that new techniques are readily adopted.

### Implementation

The creation and implementation of the RRC model can be summarised in 6 steps (Box 2). The growth of RRCs is gradual and driven by the capacities and resources available to the centre, but also determined by the needs of the farmer community and other stakeholders. Nevertheless, their ability to build strategic partnerships with other institutions, such as government services, local councils, charity organisations, research centres, universities, non-government organisations (NGOs) and development programmes, is a key element in ensuring the viability and sustainability of the centre.

### Capacities required

Creating and sustaining RRCs requires visionary and dynamic leadership. The centre also needs a motivated technical team

### Box 2. The 6 steps to creating an RRC

1. Conduct feasibility study: diagnose the information and training needs of farmers in the area.
2. Raise awareness amongst farmers and identify 'champions' for RRCs, i.e. organisations already involved in some farmer training and agricultural extension activities.
3. Train RRC staff on technical aspects but also on adult learning, communication, and extension skills.
4. Create tree nursery and gradually develop training and demonstration facilities.
5. Organise demonstrations, training, field visits, etc. for interested farmer groups; and update and refine extension knowledge to remain relevant.
6. Establish links and partnerships with other institutions to increase scope of intervention.

with a diverse skill set, including training and extension methods, farming practices, management, and finance. Some staff may be engaged on a temporary basis. It is important to build local capacity and have a clearly defined staff development strategy for when external support is no longer around (see Box 3).

Successful RRCs are not islands. Instead, they must develop and maintain strong and diversified partnerships. Connections with research organisations, universities, NGOs for capacity development and technical guidance, and with institutions that can support them financially and politically, are necessary.

### Box 3. Managing CIEFAD RRC

Le Centre Intégré d'Expérimentation et de Formation en Agriculture Durable (CIEFAD) in Bangangte, West Cameroon, was established by APADER, a local NGO. A management committee was set up that initially comprised a farmer group, contributing land and labour, and APADER bringing in financial resources. When activities of CIEFAD expanded to farmer training, service delivery, large-scale production of tree seedlings and seeds, organisation of exchange visits, etc., a technical director was appointed and the management committee was enlarged with the following: mayor, village chief, representative of a micro-finance institution, and the president of the agroforesters' union. Today, CIEFAD is a reference centre for the production of improved planting material and training of young entrepreneurs, recognised by the Ministry of Agriculture. However, it is important that the technologies and practices promoted are beneficial to farmers, at least to gain their interest in the early stages of the RRC.

### Costs

RRCs rely on a physical location for their research, demonstration, and training activities. They thus require upfront investment in land and buildings. Because RRCs develop gradually and one centre is different from another, it has been difficult to estimate investment costs. However, acquiring a suitable space may be expensive and there may be problems with land tenure. Some grassroots organisations have obtained a suitable place in their community through traditional land tenure arrangements, but it is recommended to formalise 'ownership' as soon as possible to avoid later claims on the land and/or infrastructure.

RRCs also need operational funds to run their activities. Staff salaries are usually the most expensive component of an RRC's operating costs. Therefore, managers should consider alternative approaches, such as working with volunteers, temporary engagement of trainers, and building the capacity of farmer-trainers for multiplier effects. RRCs often focus on on-farm demonstrations and centre-based training and offer

little extension whereby agents from the centre travel to other communities to extend support. The main reason for this is that they do not have adequate means of transport. However, increasing the scope of intervention beyond the community is vital for RRCs to remain relevant in the face of evolving needs.

RRCs are generally financed by a combination of:

- cash from supporting organisations (NGOs, development programmes, charity organisations, churches)
- sales of products (seeds, seedlings, farm products)
- service delivery (for-fee training programmes).

Supporting organisations usually provide the majority of the start-up costs and continue to contribute significantly to yearly operating costs, at least during the initial years. Most RRCs engage in farming activities that generate income to supplement other sources of support. RRCs also conduct 'for-fee' training programmes to clients seeking this service. In Cameroon these three sources of finance were more or less equally contributing to the operations of the RRCs. However, when an RRC focuses more on increasing its sales, less effort goes into training and extension.

### Governance and management

RRCs are generally under the ownership of a grassroots organisation, registered as an NGO or a farmers' association, and usually having other activities than running the centre. While the overall governing structure (General Assembly, Board of Directors) often remains under the umbrella organisation, the day-to-day management is generally delegated to a technical director. Based on the centre's needs and available resources, staff may be taken on to be responsible for training, communication, production, marketing, public relations and partnerships, fundraising, etc.

### Best-fit considerations

To be effective, RRCs should be sensitive to the local environment in which they operate, and reflect the particular needs of the local community. In this case, one size does not fit all. RRCs try to achieve some kind of specialisation and excellence in a few technologies or services that are highly relevant to their zone of intervention. This distinguishes them from other centres. For example, in Cameroon, one RRC puts emphasis on soil fertility improvement and targets women farmers in particular. Another RRC specialises in good cocoa practices and collaborates primarily with cocoa cooperatives. However, all of them also have other activities in their portfolio.

**Target groups:** In Cameroon, RRCs have successfully addressed gender issues and included young people in their activities. This has been achieved by working specifically with women's and youth groups, but also by offering a range of agricultural information and technologies of specific interest to women. Young people are often attracted to RRCs because of the employment opportunities they offer.

**Type of information and technologies:** Through their engagement in the evaluation and demonstration of technology, and partnerships with research institutes and universities, RRCs have the potential to extend complex and innovative technologies. RRCs promoted by ICRAF primarily focus on agroforestry, which requires a good understanding of ecological processes and multiple skills. Agroforestry typically only generates benefits after a couple of years. In such circumstances demonstrations are important to convince farmers, and technical support must continue for some years; these are things that RRCs can offer. RRCs can play an important role where a competing voice in agricultural development is needed (e.g. focus on sustainable production over cash-oriented agriculture), and/or community needs are not met by traditional extension services.

**Institutional environment:** RRCs are filling an important gap by providing information, techniques, ideas, and material help to poor farmers. Generally they thrive well where government extension systems are non-existent or not functional. Even in areas where public extension is effective, RRCs can complement other rural advisory services thanks to their proximity to the community. Moreover, they have a more diversified portfolio of products and services that aim at improving livelihoods and not only agricultural production or income. They also focus on vulnerable populations. Successful RRCs understand that working within existing legal frameworks is important for building legitimacy.

### Evidence of impact and potential scalability

One of the weaknesses of many RRCs is a lack of systematic reporting and monitoring. This makes evaluating their impact in the field difficult. RRCs are significantly contributing to improving livelihoods of farmers in their intervention areas. A majority of beneficiaries of RRCs in Cameroon are satisfied with the information, technical backstopping, and training provided. RRCs are also helping communities to get access to high-quality tree planting material at affordable prices. Between 2011 and 2013, five RRCs produced more than 370,000 tree seedlings, of which 67% was sold. The other plants were distributed to farmers and planted in public places such as schools and hospitals, and to protect watersheds, showing the social dimension of RRCs' activities.

An important condition for scaling of RRCs is ensuring their long-term financial viability and sustainability. To become sustainable, RRCs have to develop other funding mechanisms than external support. Several RRCs generate enough income to cover a substantial portion of their expenses. Nevertheless, many continue to rely on support from a parent organisation. Further technical and organisational assistance is needed to strengthen RRCs in order to increase their production capacity, skills, visibility, and credibility. In that way they can better sell their products and services and become autonomous

#### Box 4. Strengths of RRCs and challenges

The RRC approach is in line with recent reforms of agricultural extension in many developing countries. RRCs propose advisory services that meet specific needs and demands, are run by actors that have strong anchorage in the rural milieu, and also explore modes of financing other than subsidies. However, the long-term success of the RRCs will depend on:

- Capacity of staff to ensure effective advice in a large range of domains that often go beyond purely technical aspects (e.g. agroforestry) to include group dynamics, leadership, marketing, and even rural development as a whole. Would it not be better for the RRCs to keep their identity and specialise in fewer domains, rather than disperse efforts?
- Capacity to pursue activities when external funding stops. Can farmers and other target groups participate in the funding of RRCs? In what way? Is there a risk that the search for income generating options overshadows the primary role of RRCs, which is training and extension?
- Capacity to develop synergies and partnerships with other agricultural extension services or even more generally with development organisations. Is the institutional and policy context favourable to such synergies and complementarity? What strategies are needed to position RRCs on the national agricultural extension arena?

enterprises. The RRC model should be promoted more widely. Where possible, it should be integrated in national extension strategies to complement other methods. Partnerships between RRCs and other actors, in particular government programmes, development organisations, and local authorities should be actively encouraged.

Another difficulty in scaling the approach is the context-specificity and large variability between RRCs. There is a need to better understand the institutional set-up and processes required to make RRCs effective in different socio-economic and political contexts.

#### Training materials

CTA. 2015. *Rural resource centres: bringing agricultural services closer to farmers*. Fact sheet, guidebook and poster. Wageningen: CTA.

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 10, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the World Agroforestry Centre (ICRAF) with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM or CGIAR.

# Service provision by agri-cooperatives engaged in high value markets

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## Box 1. Cooperatives

Cooperatives represent a business model in which members have an equal say in what their business does and equal share in the profits. Cooperatives are guided by strong commitments to their members' well-being. They commit to open membership and self-help and often seek non-market goals, such as gender and youth empowerment, increased influence over political processes, and community development. The development of cooperatives into viable businesses is a long-term process often involving buyers, government agencies, and NGOs. Rural development will benefit from a greater number of strong cooperatives and there is an urgent need to strengthen commitments to facilitate development of cooperatives, including developing innovative ways to strengthen their business capacities, improve the services they provide to their members, and tackle those features of political-legal frameworks that inhibit cooperative growth and development.

## Introduction

Markets for agricultural products with special quality, environmental, and social attributes can provide a profitable outlet for poor farmers in developing countries. However, participation in high value markets requires that farmers commit to deliver pre-identified volumes on time and in the required form and quality – a tall order in many cases. Agri-cooperatives play an important role in linking farmers to these markets; they forge business relations with distant buyers, realise economies of scale in processing and marketing, and provide advisory and other services to help their members respond to buyer demands (see Box 1). Examples of these services include technical assistance, training, and input and credit provision.

This note presents a practical approach by which cooperatives strengthen their ability to deliver impactful and financially sustainable services. In doing so, it recognises the challenges faced by cooperatives to design services that both meet the different needs of members and are financially sustainable. Too often cooperative services are supported by external actors with no clear vision of how to continue once project support terminates, leading to disrupted service offerings for members, and fragmented learning processes for cooperatives and their partners. Innovation is urgently needed in how services are designed, how they are implemented, and cost

recovery mechanisms. At the heart of the approach lies a focus on joint learning among stakeholders – cooperatives, their business partners, government agencies, and non-government organisations (NGOs) – to better tackle the complexity inherent in the provision of effective services to poor farmers.

## Philosophy and principles

The approach aims to deliver impactful and financially sustainable services and emphasises cooperative leadership, but recognises the role of partners for service delivery and financial support. Joint learning with partners and members is crucial, allowing for adjustment of service offerings in line with the members' needs and improved coordination among stakeholders (see Box 2).

The first principle is specialisation. This means that cooperatives focus on the set of services they can effectively provide, leaving other services to those who can provide them more effectively. Specialisation implies that cooperatives understand members' needs and circumstances and how they can best intervene with the resources at hand, and where others can contribute to the process by providing complementary services to members or by helping to build the cooperative's service capacity. Cooperatives need to be aware of the dangers of trying to provide too many services at the same time and thus spreading scarce resources too thinly.

## Box 2. Philosophy for building service capacity of cooperatives

- Cooperatives need durable partnerships for building their own service delivery capacity.
- External support is critical in the initial stages, with progressive member contributions in later stages.
- Membership-funded services correspond with the quality and impact of services.
- Transparency and accountability are key, from technicians to managers to funders.
- Joint learning through critical observation, analysis, and reflection improves services.

The second principle is progressive member contributions to cost recovery. During the early years of cooperative development – when most services are likely to be sourced externally – cooperatives focus on delivering a limited range of demand-oriented services and on expanding members' awareness of services and their related benefits and costs. Member contributions can come through direct payment for services, reductions in the price paid for deliveries to the cooperative, and proceeds from cooperative operations, such as processing. These may also offset the costs of service delivery. Cooperatives should be aware about costs and benefits of these services and engage with their members to promote awareness of the need to invest in services.

The third principle is joint learning for improved services, involving cooperative leaders, member representatives, and external supporters. Learning requires experimentation in response to the changing business context and the livelihood context of members, as well as critical reflections on processes and outcomes. Different service delivery and cost recovery models should be tested, along with diverse mechanisms for

## Box 3. Wamunyu dairy cooperative in Kenya

Training in dairy farming, facilitated through the cooperative, has improved practice in areas such as animal health, animal feeding, and birth spacing. The cooperative has also provided training in a wide range of other areas relevant to farmers, not just in areas related to its specific business (dairy farming). Training sessions were organised in subjects ranging from fruit planting to building and using fuel-efficient stoves, showing a wider focus within the cooperative on improving the general well-being of its members, and not just to improving its own business performance.

Source: Shaw and Alldred (2015)<sup>1</sup>

strengthening the cooperatives' service delivery capacity (for example, vouchers, on-the-job learning, and cooperative-cooperative business schools).

## Implementation

**Step 1 – Understand needs and capacities:** Cooperative leaders and partners should assess members' productive capacity and potential demand for services, and the cooperative's capacity to deliver effective services (see Box 4). Data and analyses shed light on members' capacity to carry out on-farm production. Analysis allows for the grouping of members by resources, capacities, and needs. At this stage it is important to reflect on the strengths and limitations of the current advisory service programme: What are its strongest elements? What are its weakest elements? Who is left out? How to increase financial sustainability and how to address particular needs through partnerships with other service providers – businesses, NGOs, government agencies, consultants?

## Box 4. Farming households with differentiated needs

The coffee cooperative Soppexcca in Nicaragua provides services to roughly 500 members. Data on livelihood strategies and assets were used to classify members into three groups. Group 1 depended heavily on off-farm income and had relatively small coffee plantations. Group 2 depended heavily on farm income, but also had relatively small coffee plantations. Group 3 stood out for its relatively large coffee plantations. On average, group 3 had roughly 5 times the coffee production compared to groups 1 and 2. While the other groups depended heavily on coffee for their income, group 1 earned most of its income off-farm – leaving little time for coffee production. By understanding the different needs and circumstances of their members, cooperatives are able to adjust their service offering to diverse clientele, differentiated by gender and age, and achieve increased impact and efficiency.

Source: Donovan and Poole (2014)<sup>2</sup>

**Step 2 – Characterise the local service offering:** What services are offered in the surrounding area and what are the strengths of these services in light of members' needs? Services may be offered by government agencies, local NGOs, buyers, and processors, as well as by well-established sister cooperatives and local consultants and businesses. Relevant information can be obtained through focus group discussions and key informant interviews – the key to success is a sufficiently deep and critical assessment of service offers in terms of specificity,

1 Shaw, L., and Alldred, S. 2015. Building inclusive enterprise in Africa: Cooperative case studies. Manchester: The Cooperative College.

2 Donovan, J., and Poole, N. 2014. Changing assessment endowments and smallholder participation in higher value markets: Evidence from certified coffee producers in Nicaragua. Food Policy 22: 1–13.

quality, coverage, and costs; and a strategic view on capacity-building needs and long-term partnerships for meeting identified needs from Step 1.

**Step 3 – Develop strategy:** The strategy identifies which provider provides what services to the different types of members. This requires alignment of strategies between the cooperative and various service providers – a challenging step for which external facilitation may be needed. This is a crucial element for achieving more impactful and self-sustained services in a given area. The strategy should also detail short- and long-term options for recovering the cost of cooperative-provided services, and sources of financial support at different stages of the process. Finally, the strategy should address major gaps in knowledge, include plans for monitoring the effectiveness of services, and present a learning agenda to guide future interactions among stakeholders. There is no blueprint to strategy design – creative thinking and a willingness to experiment are needed.

**Step 4 – Reflect, learn, and adapt:** Cooperative leaders, members, and external supporters should review progress on implementation of the programme and identify options for improvement. Possible refinements cover services offered, to whom the services are offered, how the services are delivered, what their impact is, and the extent to which costs are recovered. Two aspects are fundamental for the group to advance the advisory programme: a willingness to be self-critical about service design and delivery, and sufficient and up-to-date information on the effects and associated perceptions of the programme on members. In addition to service design, stakeholder learning should encompass bottlenecks encountered along the path to achieving progressive cost recovery from members, and options for

#### Box 5. Innovations in service design

To facilitate the use of production inputs by members, the Cooperative Agricole Sabarikagny du Haut Sassandra (CASAHS) in Cote d'Ivoire designed a credit programme around its purchases of cocoa using its own funds (held back from cocoa sales). Loans were delivered in the form of inputs, not cash. The cooperative also provided staff to assist with proper application of the inputs. This also helped to ensure that farmers did not resell the inputs. By 2013, 95 out of the 179 registered members had subscribed to the credit programme and 35 had actually asked and benefited from the arrangement for a total amount of around US\$29,000. A similar programme was designed to promote maize production. In response to a members' needs assessment, the cocoa cooperative supported members to diversify into maize production.

Source: CASAHS (2013)<sup>3</sup>

adjusting strategies to achieve greater sustainability in service provision.

External co-funding will often be necessary for implementation of steps 1 and 2, with a clear phasing out strategy from the very beginning to allow cooperatives to graduate towards steps 3 and 4 based on business consolidation, improved services, and progressive impact and cost recovery.

### Partnerships required

This approach strives to build cooperatives' capacity over time to deliver impactful services, but it assumes that cooperatives will need strong partners along the way. Partners may include buyers, NGOs, banks, government agencies, and other cooperatives. For new or struggling cooperatives, partnerships for the design, monitoring, and refinement of the service programme will be critical. For well-established cooperatives, partnerships may be less critical for providing core services, but still necessary to overcome gaps in service delivery. Where partners are needed to provide complementary services, it is important to choose these partners well – in addition to technical skills, they require good listening skills, critical observation and thinking, and sound understanding of cooperatives and rural livelihoods. Where skilled partners are unavailable, exchanges with like-minded and similarly structured cooperatives may help. This cooperation promotes new forms of collaboration, such as cooperative-cooperative business schools, which may also work for newly formed cooperatives if sister cooperatives are more advanced and willing to share experiences and skills.

### Strengths and weaknesses

The approach addresses an important gap in discussions on cooperative development: the implementation of an impactful and sustainable advisory service programme. Its strength lies in providing practical guidance for addressing the complex issues around cooperative service provision and its call for learning and innovation on how cooperatives and their partners respond to members' needs. However, success in implementation may not come quickly or easily. The approach favours those cooperatives with assertive leaders able to inspire change, a minimum amount of resources, and access to capacity development partners committed to empowering cooperatives (and making themselves redundant over time).

### Best-fit considerations

This approach rests on a diverse group of farmers with access to a package of services that responds to their needs at a given point, and evolves over time as their needs become more sophisticated. Cooperatives play a major role in providing these services, and the better cooperatives are at doing so, the more viable they will be. Table 1 discusses possible service and delivery arrangements for three generic types of members.

3 CASAHS. 2013. Rapport: Projet Intrants CASAHS. Daloa, Cote d'Ivoire: Department Finance CASAHS.

**Table 1. Possible service and delivery arrangements for three generic types of members**

Member grouping	Types of service that may be needed	Potential service providers
Most vulnerable: Highly constrained asset endowments, where main focus is food security	<ul style="list-style-type: none"> <li>• Support to meet basic needs</li> <li>• Emergency credit</li> <li>• Assistance with major bottlenecks for production</li> <li>• Facilitation of services to address basic health needs</li> </ul>	<ul style="list-style-type: none"> <li>• Government agencies, NGOs and projects for assessing livelihood and health related needs</li> <li>• Cooperative services for securing basic assets (for on-farm production)</li> </ul>
Vulnerable: Members with moderate constraints in asset endowments for production, diversified livelihood strategies, but limited capacity to invest in inputs and services	<ul style="list-style-type: none"> <li>• Building human capital for improved crop management</li> <li>• Facilitating access to productivity enhancing assets</li> <li>• Direct provision or facilitation of credit services</li> <li>• Training programs for supporting livelihood diversification</li> <li>• Facilitation of services to address basic health needs</li> </ul>	<ul style="list-style-type: none"> <li>• Cooperative services for enhancing on-farm issues</li> <li>• Government agencies, NGOs and projects for basic livelihood and health needs</li> </ul>
Least vulnerable: Members with few or no constraints in asset endowments for on-farm production, able to invest in inputs and services	<ul style="list-style-type: none"> <li>• Short term credit for production of cash crops</li> <li>• Access to inputs for value chain crop</li> <li>• Technical assistance for value chain crop</li> <li>• Assistance to access higher end organic and other niche markets</li> </ul>	<ul style="list-style-type: none"> <li>• Buyers/processors (e.g. technical assistance on specific issues in production/processing)</li> </ul>

### Impact and scalability

Various factors are critical for cooperatives and partners to achieve impact and sustainability at scale through advisory services: careful design of services; taking into account the needs of cooperatives to strengthen their service delivery capacity and the service needs of members; complementarity between cooperative and externally-sourced services; efficient delivery mechanisms with a constant eye on impact and cost recovery or securing sustainable funding; and having the right partners on board for critical programme design, service capacity development, and periodic reflection for programme improvement.

### Further reading

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This content was originally published in March 2016 as GFRAS Global Good Practice Note 19, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the World Agroforestry Centre (ICRAF) and Bioversity International with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Extension campaigns

*Eric Boa, Patrick Papania, Joseph Mulema, Harun-Ar-Rashid, and Steven Franzel*

## Philosophy and principles

An extension campaign is a coordinated effort to inform many farmers in a relatively short period of time about an agricultural topic of widespread concern or interest. The aim is to achieve quick, large-scale change in farmer behaviour and practices through carefully choreographed efforts by different organisations, using a variety of communication channels. An extension campaign requires a sharp focus (Box 1) and a clear end point. It should deliver material benefits to farmers, whose needs and demands are paramount in shaping the campaign.

The chosen topic should have realistic and achievable outcomes. Campaigns are well suited to tackling plant health problems, where concerted action is needed to mitigate risks and to scale up proven but underutilised technologies. Campaigns go beyond the limited scope of individual projects to promote technologies and innovations to farmers. To be effective, campaigns need a panoply of partners and people, especially those beyond agriculture. Mass media and influential citizens, for example, offer new ways to reach large-scale audiences.

Campaigns are usually one-off events, though some may last for several months or longer. Whatever their length, all campaigns should complement rather than replace existing extension efforts, promoting practical, direct ways to improve agriculture and benefit livelihoods.

Extension campaigns differ from advocacy campaigns, which aim to influence policy, for example on the use of genetically modified crops. The most successful campaigns think and act expansively, encourage wide participation, and focus on topics that matter most to people.

## Implementation

All campaigns have common features, regardless of the methods used to disseminate messages<sup>1</sup>. The following generic points are based on experiences with plant health rallies (Box 2) and the SCALE approach (Box 3).

- Start at the geographical scale you wish to influence; avoid pilot efforts that start in hope but may fail to materialise into a full campaign.
- Define the topic (Box 1) and common goal; focus on practical needs of farmers. Draw up a schedule of activities, the

expected end point of the campaign, and the deadline for assessing outcomes.

- Assess strengths of cross-sector networks to identify the roles of public, private, and civil society partners – the most effective campaigns depend on broad alliances.
- Involve representatives from all sectors (including mass media) in planning activities; identify the key people and organisations that can make change happen.
- Identify communication channels that maximise information flow. Prepare guidelines on different ways to deliver messages: plant health rallies, radio programmes, mobile phones (texting), social media, farmer meetings, and so on.
- Define and validate the key messages to be conveyed. Design suitable formats (e.g. text messages, fact sheets, posters) for disseminating messages. For print media, ensure you have enough copies to distribute to target audiences.
- Compare knowledge, attitudes, and practices before and after the campaign. Carefully consider what data you really need and who will coordinate data collection and analysis.
- Cost all actions, identify funds, and confirm partner contributions.
- Ensure that results and lessons learned are published and shared with all participants.

Campaigns require careful planning and work best when there is widespread consultation and multisector involvement. Ensure there are enough funds to support proposed activities.

### Box 1. What are good topics for extension campaigns?

The most suitable topics are those where there is an urgent need to provide information to farmers, or where a proven innovation is not being widely used, or where simple actions adopted by many people would lead to significant improvements in livelihoods. SCALE – System-wide Collaborative Action for Livelihoods and the Environment – is an approach that has been used to address global climate change in Uganda, tractor safety in the USA, and several public health issues (see Box 3). Plant health rallies (see Box 2) are well suited to pests and diseases problems, but have also been used to promote nutritious vegetables and safe handling of pesticides.

<sup>1</sup> For earlier efforts to develop strategic extension campaigns, see Adhikarya, R. 1997. Implementing strategic extension campaigns. In: Swanson, B.E., Bentz, R.P. and Sofranko, A.J., eds. *Improving agricultural extension. A reference manual*. Rome: Food and Agriculture Organization of the United Nations, chapter 10. Available at: <http://www.fao.org/docrep/W5830E/w5830e00.htm>

## Box 2. Plant health rallies

Plant health rallies are a low-cost, flexible method for running campaigns (usually comprising a series of rallies), often on crop pests and diseases. They have been used to tackle new problems such as tomato leafminer (*Tuta absoluta*), an insect pest, and maize lethal necrosis disease, caused by viruses. Rallies have been conducted by public extension providers in Kenya, Rwanda, and Uganda, supported by the Plantwise programme of CABI<sup>2</sup>. A short course gives senior staff practical experience in running rallies, holding short interviews, and writing farmer fact sheets on the target problem. The senior staff then train local teams of extension workers, who conduct local rallies.

Each campaign involves around eight people, enough for two separate teams. Each team usually holds rallies of 45–60 minutes in up to eight public places over two days, or longer if teams can be reassigned from everyday extension duties. The teams first identify locations where people congregate, such as market places, shopping centres, and busy road junctions, and then map a route. In larger markets, teams move around for as long as they can attract new audiences (usually one or two hours).

The rally begins with a short introduction to the topic, broadcast by megaphone to a gathered crowd. A raised position increases visibility and a banner helps to attract audiences. Afterwards, team members create small discussion groups where people can ask questions and receive fact sheets and other information (e.g. who to contact for more advice). One rally member records the location details, number of people attending, topic presented and duration. A small number of people are interviewed at each rally to assess their current knowledge of the topic. These interviewees are contacted later to find out how they have benefited from information received at the rally.

Ad hoc or spontaneous rallies are not suited to all countries. In Rwanda, for example, where civic networks are strong, rally teams pre-invite (mobilise) people. Mobilisation guarantees an audience, but there are drawbacks: it is time-consuming, invited audiences may expect something in return for attending, and it is difficult to guarantee starting times.

It is important to show what a campaign has achieved beyond the numbers of people reached. What happened after key messages were disseminated?

Large-scale campaigns require major funding, and this usually means separate, donor-funded projects. More modest local campaigns are still worthwhile and can act as the starting point for greater support from government.

### Capacities required

Extension campaigns require a range of social, communication, and organisational skills. Always consider sources of expertise outside agriculture. Radio presenters, journalists, and well known public figures (such as religious leaders) have useful contributions to make to campaigns. Technical experts are important, but those who develop technologies are not always best suited to promoting them. Good interpersonal skills are essential, as is the ability to work and negotiate with diverse groups of people. Get good advice on data needed to assess campaign outcomes and impacts.

Training can also be given as part of the campaign. Plant health rally teams are taught basic communication skills: keep messages short, listen more than you talk, and respond to what you are told. Other skills are more difficult to acquire. SCALE requires experienced facilitators in its early planning stages and a core team of communications specialists to give advice once activities begin.

### Costs

The Kenya SCALE application lasted one year and cost approximately US\$150,000, with in-kind contributions of US\$100,000 from the World Agroforestry Centre (ICRAF). This included paying for a major planning workshop and supporting a small coordination unit. A regional training-of-trainers plant health rallies course (for 15 people from four countries) cost an estimated US\$15,000. The basic cost (fuel, printed material) of a two-day plant health campaign involving two teams of 16 people is around US\$100. Campaigns will vary in scale and scope, and therefore these are indicative costs only.

### Strengths and weaknesses

#### Strengths

- Campaigns can reach many people in a short time with a clear message and a simple solution or proven technology.
- The alliances and partnerships formed during campaigns stimulate new collaborations that often continue after the campaign has ended.
- Campaigns create a strong unity of purpose, encouraging contributions from organisations that boost resources and increase the scope of activities.
- Campaigns can be run at all geographic scales and need not be expensive or require major planning.

#### Weaknesses

- Launching campaigns (particularly large-scale ones) can become over-reliant on project funds and international organisations, ignoring opportunities that are locally led.

<sup>2</sup> Plantwise: <http://www.plantwise.org>

### Box 3. Scale – system-wide collaborative action for livelihoods and the environment

SCALE is a structured approach for amplifying a proven but underutilised technology. The aim is to increase awareness and technology uptake (scaling-up) through strengthened partnerships and collaborative actions. Campaigns are an important element of this approach.

The SCALE approach has been used in Kenya to improve dairy production. It is relatively costly in terms of resources and time, but with proportionally greater long-term benefits. Multiple players from multiple sectors are involved from the start, when they map the context and agree what should be addressed. In Kenya a workshop brought together 100+ people from 80 organisations to consider practical ways to help small-scale dairy farmers. The group agreed to promote fodder shrubs, one of several competing ideas. Once consensus was achieved, participants could focus on how to work together in channelling information to farmers.

SCALE attempts to catalyse coalitions and partnerships by building trust and mutual confidence. In Kenya, participants considered both real and perceived reasons why organisations didn't work together, facilitating a shift from competition and confrontation towards collaboration. The next step was to create collaborative, sustainable solutions and identify participants' contributions, an essential prerequisite before direct actions could begin.

SCALE helps to build social capital around a specific development topic, with positive effects for participants as well as target audiences. Local, targeted campaigns show the positive ways that different organisations can add value. In Kenya, the mass media were active partners and advocates of fodder shrubs, rather than mere reporters of what others were doing. About 100,000 farmers obtained seeds of fodder shrubs after this one-year project, compared with 40,000 farmers over the previous eight years. It was unclear, however, how many farmers had successfully planted seeds as a result of the SCALE efforts

- Coordination can be challenging, particularly ensuring the timely availability of recommended inputs (e.g. seeds) and information (e.g. planting rates).
- Partners with competing interests may complicate planning and implementation.
- Measuring of outcomes is often weak, partly because it is difficult to ascribe change to campaigns alone, and because not enough emphasis is given to assessment during planning.

### Best-fit considerations

Campaigns have universal relevance and are suited to many different topics, from mitigating plant health risks to promoting sustainable fishing and better natural resource

management. All sectors and organisations have potential contributions to make. Campaigns may be small-scale and local or large-scale and national, depending on funds and committed partners. Information and communication technologies may be best suited to reaching younger farmers, though all ages listen to radio, and mobile phone ownership and coverage is increasing steadily.

### Governance

Government and public organisations will usually oversee large-scale campaigns, though these are ideally led by an advisory group that balances the interests of different partners. A small secretariat is often funded by SCALE projects to coordinate activities (e.g. providing training). Small-scale campaigns will have a simpler management structure, and could be led by a single organisation (e.g. extension provider or NGO).

### Evidence of impacts, sustainability, and scalability

Evidence of impact is often dependent on numbers of people reached or anecdotal accounts, rather than widespread, well documented changes in behaviour. Campaigns have undoubtedly raised public awareness, particularly of new plant diseases in East Africa, but their ability to achieve enduring, large-scale impact is limited by the availability of durable control measures (e.g. resistant crop varieties). Where such measures exist and concerted, sustained action is taken, campaigns have had remarkable success, as in the global eradication of rinderpest. Other indirect ways of measuring impact include assessing changes in social capital, the strength of relationships, and trust between partners. Two years after the end of the SCALE dairy project in Kenya, partners continued to collaborate in promoting fodder trees. Campaigns are by definition one-off, usually short-term events and are sustainable in the sense that they are routinely used to address topics. Campaigns are inherently scalable.

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### Training materials

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This content was originally published in September 2016 as GFRAS Global Good Practice Note 24, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by Plantwise, the Agricultural Advisory Society, Bangladesh, and the World Agroforestry Centre (ICRAF) together with Eric Boa and Patrick Papania, with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# Plant health clinics

Eric Boa, Javier Franco, Malvika Chaudhury, Patrick Simbalaya, and Elna Van Der Linde

## Introduction

Farmers and extension workers face a constant challenge in managing plant health problems. Biotic causes (pests and diseases) and abiotic causes such as low soil fertility lead to regular and often significant losses in crop production and quality. Diagnosis is made difficult by a diversity of causes and symptoms with multiple possible origins. Choosing the best management options needs careful consideration.

Technical support services are often weak and extension providers struggle to reach all farmers. Plant health clinics (PHCs) are a practical way of enabling plant health specialists to work closely with extension workers in offering farmers advice on how to manage all types of plant health problems.

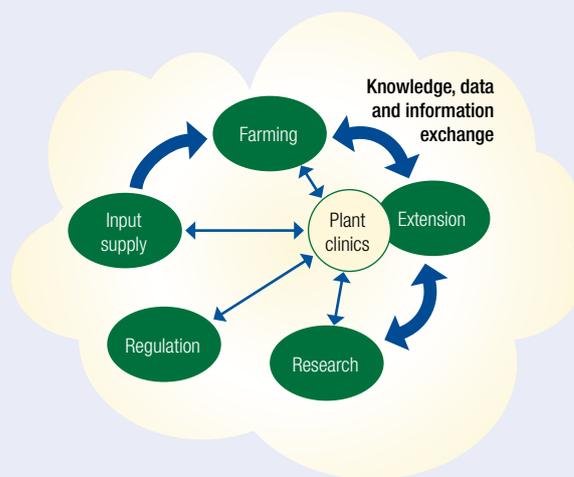
Plant health clinics vary in how they operate and the services they offer. Institute-based plant clinics have laboratory facilities for identifying pests and pathogens, and some offer management advice through extension intermediaries. Most smallholder farmers are unlikely to know of such clinics or are unable to contact them directly.

Extension-based PHCs, the main focus of this note, serve farmers directly. They are run in public places, close to where farmers live and work. Plant health clinics are a demand-led service giving advice as part of everyday extension activities. They work most effectively as part of an overall plant health system<sup>1</sup> approach (Box 1) which seeks to increase access to sources of expertise and knowledge.

In the United States, for example, plant clinics run by Land Grant Universities in 42 states<sup>3</sup> link county agricultural officers to scientists with joint extension and research duties. An impressive plant health regulatory body<sup>4</sup> oversees surveillance efforts, while a national network of plant clinics responds quickly to pest and disease outbreaks. But this publicly funded plant health system is an exception. In India, plant clinics based in agricultural universities and farmer training centres also blend extension and research in pockets of excellence, but nationally farmer outreach is low. India also has around 3,000 agri-clinics in 25 states, commercial enterprises that provide ad hoc plant health advice, part or wholly financed through sale of inputs and other services. Here the agri-clinics supplement rather than replace public extension.

## Box 1. Plant health system approach

Plant health clinics are part of an integrated support system for delivering plant health services to farmers.



Source: Plantwise<sup>2</sup>

## Philosophy and principles

The main aim of PHCs is to give farmers advice on plant health problems. The key features are described below.

**Target audience:** Plant health clinics are open to all farmers, and aim to provide equal access to men and women from all social and ethnic groups. They accept any crop and any type of problem.

**Location:** A PHC should be accessible, visible, and held at times that are convenient to farmers. Good publicity is essential for all venues, such as markets, community centres, and other places that farmers regularly visit. Offices in extension and agricultural department buildings tend to work less well without mobilisation of farmers.

**Frequency:** Once every two weeks for around two to three hours is recommended, but this is subject to availability of staff and funds. When demand is low, for example during the dry season when few crops are grown, PHCs may temporarily cease.

1 Danielsen, S. and Matsiko, F.B. 2016. Using a plant health system framework to assess plant clinic performance in Uganda. *Food Security* 8: 345–359.

2 CABI. 2015. *Plantwise strategy 2015–2020*. Wallingford, UK: CABI. Available at: <http://www.plantwise.org/about-plantwise/strategy/>

3 National Plant Diagnostic Network: <http://www.npdn.org>

4 Animal and Plant Health Inspection Service: <http://www.aphis.usda.gov>

**Equipment:** Table, chairs for plant doctors and clients, shade (if held outside), hand lenses, knives for cutting open plant samples, PHC banner, forms for recording queries and giving recommendations to farmers, reference literature (e.g. pest and disease handbooks), and extension materials (e.g. photosheets, fact sheets). Laptops and tablets are useful for recording queries and advice and for showing photos of symptoms.

**Samples:** Farmers should bring examples of unhealthy plants, preferably with early symptoms. Material should be disposed of safely to avoid spreading pests and diseases. Reference photographs of key pests and diseases can help to diagnose problems where no samples are available or material is of poor quality.

**Plant clinic data:** Systematic recording of queries and advice helps to monitor PHC use and the relative importance of different problems, including new pests and diseases. Analysis of advice identifies areas where PHC staff need further training and information. This feedback is important for PHC staff to understand the benefits of recording data.

**Operators:** Plant health clinics are run by many different organisations involved in agriculture. They include public extension services (e.g. Pakistan), farmer organisations (Nicaragua), agricultural institutes (China), NGOs (Uganda), and national plant protection organisations (Burkina Faso).

**Staffing:** Clinics may be conducted by extension workers, plant health inspectors, and others who have attended plant doctor training courses (Box 2). At least two people (plant doctors) are needed to process queries efficiently and share their thoughts on diagnosis and advice.

**Technical support and follow-up:** Plant health clinics provide a stand-alone service but work best when they can access linked services and resources facilitated by a plant health system approach (Box 1).

### Box 2. Training of plant doctors

Plantwise offers two short training courses<sup>5</sup>. Module 1 is on field diagnosis and running plant clinics. Module 2 is on developing good recommendations. The two- to three-day courses accommodate up to 20–25 people and are run by trainers trained by CABI staff. Plant doctors can access further training material as well as extension literature via the Plantwise website<sup>6</sup>. Supplementary courses on writing fact sheets and monitoring progress are also held.

## Implementation

The following guidelines consider relatively large-scale establishment of PHCs, usually at country level. This approach offers significant advantages in facilitating access to expert support. Single or small groups of PHCs can be run independently, but establishing links will require more effort.

**Getting started:** Planning should ideally start with the Ministry of Agriculture and the NPPO. This will strengthen sustainability but can also be a lengthy process. It should be possible to start pilot PHCs with individual organisations, pending official government support. Early results help to demonstrate the clinics' wider value and encourage official support and investment.

**Identifying operators:** The functions and features of a PHC need to be clearly described and discussed with potential operators before launching. Extension providers are often concerned about the extent of their knowledge of crop protection, yet familiarity with farmers and agriculture is equally vital in framing advice. It is important to discuss PHC results and experiences with staff as well as their managers, so that the value of PHCs to organisations is clearly understood.

### Development stages:

1. Scoping study of organisations working in plant health at national and regional levels to assess roles and interactions
2. Piloting of PHCs with first-time organisations
3. Consolidation – regular clinics are run by confirmed operators
4. Scaling-up – the number of clinics expands and new operators take part
5. Sustainability – stable operation of plant clinics as part of a functioning plant health system.

This is an ambitious series of steps for countries to complete, and requires strong overall leadership and support at high level within government, as seen in Kenya, for example.

**Coordination:** The Plantwise programme has national coordinators seconded from public organisations, supported by CABI counterparts<sup>7</sup>. Countries with large, autonomous states (e.g. India and Brazil) may require more than one coordinator. High-level planning is carried out by a national forum comprising plant health stakeholders from the public, private, and civil society sectors. Annual meetings review overall progress and functioning of a national plant health system. Planning and monitoring of regular activities are carried out by a steering committee, which can also help to coordinate responses to pest and disease outbreaks. Staff from different

5 Plantwise – Plant doctor training: <http://www.plantwise.org/plant-clinics/plant-doctor-training>

6 Plantwise – Knowledge bank: <http://www.plantwise.org/KnowledgeBank/Home.aspx>

7 CABI. 2015. *Plantwise Annual Report 2015*. Wallingford, UK: CABI. Available at: <https://www.plantwise.org/Uploads/Plantwise/Plantwise%20Annual%20Report%202015.pdf>



PHCs operating within a small area may hold cluster meetings to discuss and review matters of interest.

### Capacities required

Staff of PHCs should have a broad knowledge of agronomy, the common crops, and pests and diseases that occur locally. The basic requirements are post-secondary educational qualifications and the ability to use a computer or other devices to write reports and enter data, coupled with good interpersonal skills for interviewing farmers, and a systematic approach to solving problems. Plant doctor training provided by Plantwise (Box 2) gives pragmatic guidance on how to diagnose problems and give advice.

The term 'plant doctor' is widely used by those who run PHCs. Plant doctors do not as yet need to be registered or accredited. Plant health services lack the professional roles found in human and animal health, such as doctor, nurse, and vet, and further discussion is needed of formal qualifications and regular assessment of competencies. These discussions should recognize that plant doctors provide basic healthcare, similarly to a rural health clinic. They recognise the unknown, and seek information and advice from elsewhere.

### Costs

If all basic equipment needs to be purchased, the minimum cost would be around US\$300. Tables and chairs may already be available or borrowed on the day of the PHC. Running costs include transport to the venue, daily allowances for food, airtime for mobile phones, and internet connections. Assuming two persons per clinic, approximate costs would be around US\$50 per session. Honoraria paid to 'hire' crop protection experts to assist at PHCs are difficult to sustain. PHCs usually provide services free of charge, and introducing fees is unlikely to generate enough funds to offset the potential deterrent effect. Institute-based plant clinics are more likely to charge for laboratory diagnoses, which can be costly to undertake.

## Strengths and weaknesses

### Strengths

- Plant health clinics are demand-led: they respond to problems that concern farmers and give bespoke recommendations.
- They do not require special equipment so running costs are low.
- They build on existing knowledge and organisations that work directly with farmers and are familiar with local agriculture. They showcase what rural advisory services can achieve through effective use of available resources.
- They enable organisations to provide practical support to farmers on a larger scale.
- They help to forge new and stronger links between rural advisory services and national and international sources of plant health expertise and knowledge.
- Plant health clinics encourage constructive dialogue with agrodealers to guarantee that recommended inputs are available and that dealers respect the advice given to farmers.
- They provide a platform for public, private, and civil society sectors to collaborate.

### Weaknesses

- Operators struggle to schedule regular sessions in addition to normal staff duties.
- Attendance can be disappointing and continuing effort is needed to publicise sessions.
- Establishment of national fora and steering committees is a lengthy process. Signing agreements and confirming partnerships requires perseverance and steady negotiations.
- Partnerships between PHCs and agrodealers may be viewed with suspicion because of concern about bias in recommending pesticides.
- Farmers may expect instant diagnoses and advice, and plant doctors fret about not being able to meet this demand.
- The quality of advice is variable and needs sustained effort to

improve. Gaps in knowledge and weak skills of PHC staff are difficult to overcome with plant doctor training alone.

- Developing local ownership and self-sustaining funding models for PHCs requires strong political buy-in. Changes in government policies and personnel can easily undermine progress.

### Best-fit considerations

Plant health clinics are suited to all agricultural systems and address consistent demand by farmers for timely advice. The biggest gains are often seen where existing rural advisory services are weakest, as in Sierra Leone, for example. Plant health clinics are suited to farming communities that are often ignored or that fail to receive public extension support. They can be operated by many different types of organisation. They are flexible and adaptable to local conditions. The clinics help to bridge gaps between extension and research and strengthen collective responses to plant health threats and risks.

### Governance

Plant health clinics are owned by the organisations that run them, although their management will also depend on any conditions set by external funding. National coordination is usually through the Ministry of Agriculture or delegated authority. Regional departments of agriculture may also play an important role in coordinating clinics. Under the Plantwise programme, 19 countries have established a national governance body as part of a general plant health system approach.

### Evidence of impacts, sustainability, and scalability

Several studies of PHCs have found positive trends in increased crop production and income earned<sup>8</sup>. Attributing these key changes to PHCs alone is difficult. High farmer satisfaction is reported from several countries and anecdotal evidence attributes yield gains to clinic visits. Plant doctor knowledge and confidence has improved substantially following training under the Plantwise programme, with nearly 3,000 having attended courses.

Local funding in Pakistan, Sri Lanka, and Malawi, buoyed by positive feedback from initial PHCs, has seen the combined number for these three countries rise steadily from 147 in 2013 to 529 in 2015.

Sustainability depends on organisations incorporating PHCs into their everyday activities and embedding them in a plant health system. Local commitment plus strategic national support is the key to maintaining regular and high-quality services. For example, strong central support in Kenya has created a thriving network of PHCs. It is generally more difficult to maintain such networks when management of public extension services is devolved to regions.

Plantwise monitors progress using a sustainability roadmap, combining scores for key elements such as plant clinic operations, stakeholder linkages, use of data, and monitoring and evaluation<sup>9</sup>. In future this tool will help to identify corrective actions needed to strengthen sustainability.

### Further reading

Boa E. 2009. How the Global Plant Clinic began. *Outlooks on Pest Management* 20: 112–116.

Mur, R., Williams, F., Danielsen, S., Audet-Bélanger, G. and Mulema, J. 2015. *Listening to the silent patient: Uganda's journey towards institutionalizing inclusive plant health services*. Working Paper 7. Wallingford, UK: CABI.

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This content was originally published in September 2016 as GFRAS Global Good Practice Note 23, available to download at <http://www.betterextension.org>.

This Global Good Practice Note is based on contributions and work carried out by Plantwise and partners in 34 countries, Esco Kivu sarl in DR Congo and ARC South Africa, with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

8 Brubaker, J., Danielsen, S., Olupot, M., Romney, D. and Ochatum, N. 2013. *Impact evaluation of plant clinics: Teso, Uganda*. Working Paper 6. Wallingford, UK: CABI. Available at: <http://www.cabi.org/Uploads/CABI/expertise/CABI-WP6-impact-of-plant-clinics-teso-uganda.pdf> and Bentley, J., Boa, E., Almendras, F., Franco, P., Antezana, O., Díaz, O., Franco, J. and Villaruel, J. 2011. How farmers benefit from plant clinics: An impact study in Bolivia. *International Journal of Agricultural Sustainability*: 393–408.

9 Plantwise roadmap: <http://www.plantwise.org/Uploads/Plantwise/roadmap.pdf>

# Navigating ICTs for extension and advisory services

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## Introduction

Improved availability of, and access to, information and communication technologies (ICTs) – especially mobile phones, computers, radio, internet, and social media – has provided many more opportunities for collection, processing, storage, retrieval, managing, and sharing of information in multiple formats. Some of these applications, such as tele-centres, web-portals, call centres, mobile apps, community radio, digital videos, audio and video conferencing, and e-learning platforms, have the potential to provide a wide range of services (information, awareness, promotional, advisory, knowledge, technology transfer, training, education, and much more) to farmers and other agricultural innovation system (AIS) actors in a timely, comprehensive, cost-effective, and interactive manner. However, the high number and rapidly changing availability of ICTs may leave extension managers confused as to which methods are available and when to use them. This note explains how to navigate the many types and gives tips on when to use them.

## Philosophy and principles

ICTs can enable information and knowledge access and sharing among AIS actors, thus complementing conventional extension advisory methods depending on the situation and target group. The guiding principles<sup>1,2,3</sup> of ICTs for better extension and advisory services (EAS) are:

- **Relevant content:** Contextualised or farmer-specific, needs-based, timely, and quality content are the major aims of ICT-based extension and advisory services. ICTs are a tool and only help to share content; they do not generate content.
- **Appropriate tools:** Among a variety of ICTs, choose the formats, channels, tools, devices, and applications that best match the purpose, content, and clientele.
- **Integration of methods, actors, and services:** Integrating ICTs with other conventional extension methods (like farmer field schools, participatory extension, and demonstrations) and pluralistic actors (public, private and

farmer-based organisations) along the value chain will create synergy in EAS.

- **Information PLUS:** To convince the clientele, show and tell. ICT-based information alone is not enough and needs to be combined with field demonstrations, exposure visits, group discussions, and other conventional methods. Not just advisory information, but a complete resource package across the agricultural value chain<sup>4</sup> needs to be provided.
- **Human element:** Development of ICT ‘champions’ to create a legacy of promoting continuous leaders and followers is important for continued commitment of the extension stakeholders to use ICTs.
- **Complementarity to EAS:** ICTs can play only a complementary role in extension. If used appropriately, they create synergy and better impact when combined with conventional extension efforts.
- **Institutionalising ICTs:** Institutional policy and guidelines for use, development of ICT literacy, ensuring competency of staff, and infrastructure development should be integral parts of the institutional set-up for use of ICTs.
- **Long-term and continuous engagement with ICTs:** To get better outcomes, ICTs need to be integrated with conventional extension approaches for a reasonably (at least five years) long period.

## Implementation

**Broad areas of ICT implementation<sup>5</sup>:** ICT-based extension advisory methods are relevant in areas such as pre-production, production, post-harvest and marketing, financial services (credit, payment, savings, insurance), and gathering and distributing of climate and other data. The list below and Table 1 indicate which ICTs to use to achieve five broad aims<sup>6</sup>:

- **Offering localised and customised information, advisory, and other services:** Farmer call centres, mobile apps, radio, TV.
- **Helping to create, document, store, retrieve, share, and manage information:** Web portals, crop-specific portals,

1 Saravanan, R. (ed.) 2010. *ICTs for agricultural extension: Global experiments, innovations and experiences*. New Delhi, India: New India Publishing Agency (NIPA).

2 Saravanan, R. 2013. e-Agriculture prototype for knowledge facilitation among tribal farmers of North-East India: Innovations, impact and lessons. *Journal of Agricultural Education and Extension*. 19 (2): 113–131. Available at: <http://www.tandfonline.com/doi/abs/10.1080/1389224X.2012.718247>

3 World Bank. 2011. *ICT in agriculture: Connecting small holders to knowledge, networks, and institutions*. e-Source Book. Report no. 64605. Washington, DC, USA: The World Bank. Available at: <http://www.ictinagriculture.org/content/ict-agriculture-sourcebook>

4 Saravanan, R. 2011. *e-Arik: Using ICTs to facilitate “climate-smart agriculture” among tribal farmers of North-East India*. ICTs and Agricultural Adaptation to Climate Change Case Study. Manchester, UK: Centre for Development Informatics, University of Manchester. Available at: [http://www.niccd.org/sites/default/files/NICCD\\_AgricAdapt\\_Case\\_Study\\_eArik.pdf](http://www.niccd.org/sites/default/files/NICCD_AgricAdapt_Case_Study_eArik.pdf)

5 World Bank. 2011. Op. cit.

6 Saravanan. 2011. Op. cit.

Table 1. Appropriateness of use of different ICTs for various functions

\*\*\*\*\* appropriate    \*\*\* moderately appropriate    \*less appropriate

Functions		Information and communications technologies (ICTs)													
		TV		Radio		Mobile phones (basic/feature)		Computer/laptop/smart phones							
		TV broadcasting	Video with DVD	Radio broadcasting	Community radio	Text	Voice	Without internet		With internet					
								Expert systems/decision support systems/interactive multimedia CDs	Digital video	Animation	Website/web portal/ knowledge banks/online repositories	Tele/video conference	Mobile apps	e-Learning platforms	Social media
Offering localised and customised information, advisory, and other services		***	***	*****	*****	*****	*****	*****	***	*	***	***	*****	*	*****
Helping to create, document, store, retrieve, share, and manage the information		***	*****	***	*****	*****	*****	*****	*****	***	*****	*	*****	***	*****
Enabling collaboration, sharing, and partnerships for innovation among extension actors		*	*	*	***	***	***	*	*	*	*****	***	*	***	*****
Enabling farmers and others to gain a voice		*	*	*	*****	***	***	*	*****	*	***	***	***	*	*****
Facilitating capacity development of farmers, extension professionals, and other AIS actors		***	*****	***	*****	*	*	*****	*****	*	*****	***	*****	*****	*****

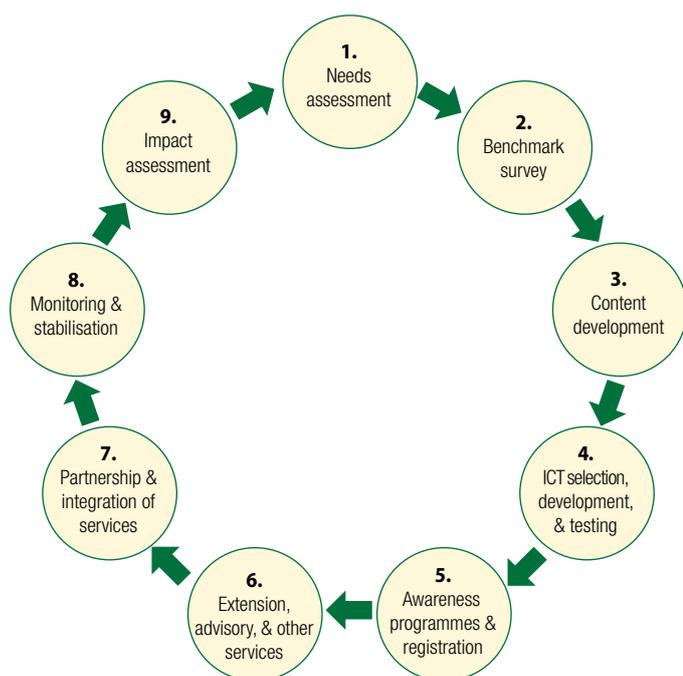
knowledge banks, expert systems, agricultural information management systems.

- **Enabling collaboration, sharing, and partnerships for innovation among extension actors:** Social media, discussion groups.
- **Enabling farmers and others to 'gain a voice':** Community radio, tele-centres, videos, virtual communities of practice and social media.
- **Facilitating capacity development of farmers, extension professionals, and other AIS actors:** E-learning mechanisms (open distance learning, learning object repositories, massive open online courses, and other e-learning mechanisms), training by using ICTs, survey and monitoring tools, and applications.

**Implementation steps of ICT-enabled EAS:** As discussed earlier, appropriateness of ICTs depends on the situation, and their use is most successful as a catalyst of development. To use them effectively, a series of logical steps needs to be followed (Figure 1). While the steps may be indicative of the logical delivery of ICT projects, they are not absolute in any terms, but depend on the situation and best judgements of the extension organisation, based on detailed need assessment surveys of clientele and other stakeholders.

1. **Needs assessment:** EAS is most useful and applicable when the information and services provided are localised and needs based. So for ICT projects to be successful, the first and foremost action of the host organisation should be a needs assessment of the target community.

2. **Benchmark survey:** Standards or points of reference are very important for ICT-enabled services to meet their objectives and this makes benchmark surveys a necessity. They are also useful as standards of monitoring and evaluation.
3. **Content development:** Localised and customised content needs to be developed, based on the results of the needs assessment and benchmark surveys to avoid blanket recommendations.
4. **ICT selection, development, and testing:** Based on localised needs, content, and target groups, the appropriate ICT tool needs to be selected, developed, and pilot-tested for determination of suitability.
5. **Awareness programmes and registration:** One major drawback in ICT projects is lack of awareness of target users of the project's existence or benefits. To solve that, innovative campaigns need to be conducted to make the intended audience aware of the projects. This is especially important in the case of subscription-based services, as the users need to register to receive the benefits.
6. **Extension, advisory, and other services:** Based on demand and needs of the users, the services are to be provided to the targeted groups.
7. **Partnership and integration of services:** Depending on the needs of the project and the services provided, stakeholders need to collaborate to determine which services can be integrated to avoid duplication and provide quality service to the users.
8. **Monitoring and stabilisation:** Continuous monitoring is an important function, especially in the pilot phase, to determine the suitability of the project for target users and modifications should be made accordingly to the services offered to ultimately scale up the project in a profitable manner.
9. **Impact assessment:** This remains one of the most important steps in implementation of ICT projects, as the impact ultimately determines the degree of success of the project in bringing about the desired changes in the target group, as well as the factors deciding its long-term sustainability.



**Figure 1. Steps for implementation of ICT enabled EAS**

### Capacities required and how to develop them

First and foremost, the main capacity needed for using ICT-enabled services and social media is basic knowledge of how to use the devices and navigate the internet. Advanced technical knowledge and computer skills are needed for hosting web portals, e-learning platforms, mobile app development, maintenance of tele-centres, and others.

Development of ICT applications needs situation-specific strategies. Awareness creation, needs-based, location-specific content creation, and inclusion of farmers in creating contents can go a long way in developing the relevant content. Also, specialised training on the use of ICTs and content development for employees can be helpful in increasing the quality of the services and glitch-free maintenance of the ICTs.

## Governance

**Partnership and maintenance:** ICT projects can either be individually maintained by the host institution or handled in collaboration with other stakeholders depending on the application. While programmes for TV, radio, DVDs, social media, and mobile apps (mApp) can be produced by extension organisations or individuals, multi-stakeholder collaboration is very much necessary for mobile-based advisory services, web portals, e-learning platforms, expert systems, and decision-support systems.

**Roles of stakeholders:** Stakeholders in ICT projects may have multiple roles, the most important being hosting, content creation, maintenance, and funding. The type of ICT project determines the role of stakeholders involved. The host organisation also plays the role of facilitator to maintain collaboration among the stakeholders whenever needed.

## Costs

The cost of developing and using ICTs varies greatly depending upon the infrastructure and scale of coverage. For applications like social media, the cost incurred may just be few US dollars for devices and data charges, while for complex applications like web portals, e-learning platforms, mobile apps, expert systems or decision-support system development, the cost may go up to several million US dollars. Capacity development activities and maintenance also require considerable cost. Some indicative costs for common requirements are: creating a basic website – US\$300–2,000; content management system (CMS) integration – US\$2,000–10,000; advanced web portals with added features may cost US\$10,000–60,000 depending on the design; maintenance of web portals also requires considerable cost. Expert systems may cost US\$1,000–10,000 depending upon the design, software, and size of contents. mApp development can range from free of cost to US\$70,000 or more depending on its architecture and features.

## Strengths, weaknesses, opportunities and challenges

ICT applications are diverse, and their suitability varies based on the context of their use and the type of application used.<sup>7</sup>

But sticking to the broad concept of ICTs for EAS, Table 2 gives a general and overall idea of their strengths, weaknesses, opportunities, and challenges in EAS.

## Best-fit considerations

**Target groups:** The suitability of the wide range of services that can be provided through ICTs depends on the target group. ICTs like TV, radio, video, tele/video conferences, and voice-based mobile advisory services are accessible to all, irrespective of literacy level or technological skills, whereas applications like web portals, expert systems, decision-support systems, text-based mobile advisory services, e-learning platforms, and social media are more useful for literate farmers with basic technical skills. Community radio provides a very good platform for women farmers to voice their opinions.

**Functions:** Awareness creation and technology transfer are the most important functions of TV, radio, videos, and community radio; advisory and market information are the most important functions of mobile-based advisory services; advisory and technology transfer are principle functions of expert systems, decision-support systems, and interactive multimedia CDs; web portals provide unique opportunities for information sharing and linking with other stakeholders of AIS. E-learning platforms are mostly for educational purposes; and social media integrates all functions of advisory, knowledge sharing, awareness creation, linking with AIS actors, and technology transfer (see Table 3).

## Evidence of impact and potential scalability

**Impact indicators:** While before–after comparison of knowledge is an important impact indicator of broadcast services, the time and cost saved, increased income, and better market decisions and participation can be important impact indicators for web- and mobile-based advisory services. Continuous engagement of users in discussions, creation and sharing of contents, increase in the membership subscription, and feedback of members can serve as impact indicators for social media.

**Table 2. Strengths, weaknesses, opportunities, and challenges**

Strengths	Weakness	Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Better access to services</li> <li>• Cost-effective</li> <li>• Timely</li> <li>• Anytime, anywhere</li> <li>• Supplement the role of extensionists</li> <li>• Better research–extension–client system linkages</li> </ul>	<ul style="list-style-type: none"> <li>• Success depends on human commitment</li> <li>• Lack of personal touch</li> <li>• Needs ICT skill and competency</li> <li>• Lack of institutional ICT policy</li> <li>• Long-term sustainability depends on funding, champions, and other factors</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous improvement of ICT infrastructure</li> <li>• Penetration of high-end mobile phones</li> <li>• Reducing cost of ICT infrastructure and services</li> <li>• Multiple players in EAS services provision using ICTs</li> </ul>	<ul style="list-style-type: none"> <li>• Creating farmer-specific and relevant content</li> <li>• Language barriers</li> <li>• Low literacy of rural farmers</li> <li>• Imparting ICT skills to EAS stakeholders</li> <li>• Duplication and contradictory information flow</li> </ul>

<sup>7</sup> Saravanan. 2010. Op. cit.

**Table 3. Appropriateness of types of ICTs to achieve various EAS functions**

\*\*\*\*\* appropriate \*\*\* moderately appropriate \* less appropriate – blank cell denotes not appropriate

Extension functions	Information and communications technologies (ICTs)													
	TV		Radio		Mobile phones (basic)			Without internet			With internet			
	TV broadcast	Video with DVD	Radio broadcast	Community radio	Text	Voice	Expert systems/ interactive multimedia CDs	Digital video	Animation	Website/ web portal/ knowledge banks/online repositories	Tele/video conference	Smart phones/ mobile apps	e-Learning platforms	Social media
Awareness	*****	***	*****	*****	*	*	*	*****	*****	***	*	*****		*****
Information	*****	*****	*****	*****	*****	*****	***	*****	*****	*****	*****	***		*****
Promotional	***		***	*	***	***	*	***	***	***	*			***
Advisory	***	***	***	*****	***	*****	*****	***	*****	***	*****	*****		*****
Knowledge sharing	*****	*****	***	***	***	***	***	***	*****	*	*****	*****		*****
Documenting & sharing Indigenous Technical Knowledge (ITK)	***	*****	*	*****		*		***	***	***	*			*****
Technology transfer	*****	*****	***	*****			*****	*****	***		***			*****
Training		***						***		*****				*****
Education/ e-learning	*	***	*	*				***		***	*			*****
Market information & linking			*	***	*****	*				***	*****			*****
Credit and banking access					*****					***	*****			
Input linking	*		*	***	*****	***				*****	*****			***
Mass advisory	*****	*	*****	*****	***			*	***		*****			*****
Business planning											***			
M&E, enumeration, survey									*****	*****	*****			
Linking with AIS actors				*****	*					*****	*			*****
Feed back				*****		*****			*****	***	*****			***
Target groups	Farmers, agripreneurs, input dealers, stakeholders in value chain, extensionists	Farmers, agripreneurs, extensionists	Farmers, agripreneurs, input dealers, stakeholders in value chain, extensionists	Women farmers, agripreneurs, stakeholders in value chain, input dealers	Literate farmers, agripreneurs, input dealers, stakeholders in marketing channels, extensionists	Farmers, agripreneurs, input dealers, stakeholders in marketing channels, extensionists	Literate farmers, extensionists, agripreneurs	Farmers, agripreneurs, extensionists	Illiterate farmers, extensionists	Literate farmers, agripreneurs, input dealers, stakeholders in marketing channels, extensionists, policy-makers	Farmers, extensionists	Mostly literate farmers, entrepreneurs, input dealers, stakeholders in marketing channel and value addition, extensionists	Extensionists, researchers, academicians, farmers, agripreneurs, policy-makers	Literate farmers, agripreneurs, input dealers, stakeholders in marketing channels, extensionists, research and academic institutions, experts, policy-makers

Source: Modified from: Bell, M. and Payne, J. 2011 ICT options to enhance agricultural extension. The MEAS ICT Matrix. Available at: <http://www.meas-extension.org/resources/ict>

**Potential scalability:** Scalability still remains a major problem in ICT projects after nearly three decades of their use in EAS, mainly because there is no fixed roadmap for success. Scalability is very much dependent on the context of use and can best be suggested by continuous monitoring and evaluation and user feedback of applicability of the information and advisory services provided.

### Issues of sustainability of the approach

There is more than one factor that influences sustainability of ICT initiatives. Profit-oriented or financially sustainable services are more user demand-oriented, as subscription is important to meet operational expenses and for the project's financial sustainability. Customised demand-based information and advice on ICTs are not choices but a necessity for long-term sustainability. Applications like social media, mApps, and mobile- and web-based farmer specific advisory services enable high user engagement and help them to customise the information they retrieve, thus making it personalised and applicable, which in turn ensures the long-term sustainability of ICT projects.

### Training materials and resources

CGIAR: <http://ictkm.cgiar.org/>

CTA: <http://www.cta.int/en/category/featured-items/icts-for-development.html>

FAO: <http://www.e-agriculture.org>

IICD: <http://www.iicd.org>

IMARK Group: <http://www.imarkgroup.org> (Information Management Resource Kit)

Inveneo & FHI 360's TechLab: <http://www.ictworks.org>

MEAS: <http://www.meas-extension.org/resources/ict>

World Bank: <http://www.ictinagriculture.org>



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This content was originally published in August 2015 as GFRAS Global Good Practice Note 11, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Mobile-based ‘bundled’ services: example of Agri-Fin Mobile

Carol Kakooza

## Introduction

Smallholder farmers in developing countries face a number of challenges that impact their productivity and contribution to food security. These include lack of access to financial services (credit, savings, and micro-insurance) and limited access to rural advisory services. Over the years, there have been efforts to address these challenges to improve smallholder farmer productivity and contribution to food security. However, the lives of smallholder farmers have not significantly improved because only individual constraints have been addressed while others have been neglected. Mercy Corps realised that it was necessary to find an affordable, accessible way of providing services that addresses multiple challenges in sustainable business models.

## Agri-Fin mobile program Innovative implementation methodology: Mobile based bundled services

The Mercy Corps Agri-Fin mobile program provides a ‘bundle’ of advisory and financial services plus market information to the smallholder farmer via the mobile phone. Through this approach the programme brings together players including banks, mobile network operators, smallholder farmer aggregators, rural advisory service providers, and platform

hosting and content managers to build a comprehensive suite of services that addresses all the farmers’ constraints together. By using a new strategy called bundled services, the programme joins products and services together to provide a single combined unit on the mobile phone.

## Philosophy and principles

To build mobile bundled services, three key principles ensure success. These centre on partnerships for development:

- Firstly, multiple stakeholders should be engaged on the basis of shared values. Partnerships with both public and private sector players are critical; however, they should be based on critical capabilities and skills essential for the bundled services. It is also critical that the partners have established goals and commitment to contribute to the improvement of smallholder farmers’ livelihoods.
- Secondly, it is critical to identify a ‘product champion’ who accepts ownership and drives the development and rollout of the bundled services. In Indonesia, a social enterprise company called 8 villages has launched a platform known as LISA (Layanan Informasi Desa (Village Information Service) which leverages information and communication technologies (ICTs) to address information challenges

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in rural markets. Econet Wireless in Zimbabwe has led the development and rollout of the EcoFarmer suite of services that capitalises on the organisation's mobile telecommunications infrastructure. In Uganda, FIT Uganda is disseminating agricultural market information and providing market intelligence to smallholder farmers.

- Thirdly, to consolidate the delivery of the bundled services, the human interface is still vital for all ICT-based projects. In Zimbabwe the programme partnered with the Zimbabwe Farmers Union, which has a track record of working with smallholder farmers to advance their interests and welfare. In Indonesia the programme works closely with government extension officers, who ensure uptake by presenting mobile-based solutions with a human face.

A solid network of committed partners invested in targeting the rural market with a strong product champion are non-negotiables for extension of rural advisory services to smallholder farmers. These principles will further ensure sustainability of the services.

### Geographical, socioeconomic, and agro ecological contexts

The Agri-Fin mobile programme has been implemented in three different contexts in two different continents. The uptake is highly dependent on context, thus there is a difference in implementation strategies but with the same aim. Total smallholder farmers reached is 300,000, with 60% of these adopting farming methods sent by phone.

Knowing how to use a mobile phone has been one of biggest challenges, but with simple curriculum introduced at mobile and financial literacy training workshops, most smallholder farmers have learnt an easier approach to keeping their funds on the mobile phone.

Most information is passed to farmers using mobile phones, and there are usually extension personnel guiding farmers comprehend the messages sent to them.

Agriculture and finance have been merged in Agri-Fin Mobile because there is a need in the agriculture space for financial



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inclusion. Thus a partnership was formed with GIZ as the financial literacy advisor on the programme, which has allowed for integration of simple financial practices for the small holder farmer to use.

### Capacities required

The product champion should have the relevant technical capacities and financial muscle to invest in and drive the development of bundled services. Other partners should be able to bring to the table key skills, from content aggregation to marketing and distribution of services. Selected partners can take a leading role in identifying appropriate methods of entering the market in line with their knowledge of the rural market.

Key capacities that are embodied by the Agri-Fin mobile program are essential for developing the bundled services:

- Facilitation – The Agri-Fin team identified key players in the agriculture and telecommunications sectors and facilitated the development of solid partnerships based on the shared value approach.
- Market insight – In each country there was need to develop marketing strategies for the bundled services, and understanding of rural market needs was crucial.

#### Zimbabwe

##### Econet Wireless – product champion

Econet Wireless International is a diversified global telecommunications group and the country's leading mobile network operator. Econet Wireless Services is a subsidiary mandated to offer mobile money services, solar products, and mobile solutions. EcoFarmer is the unit tasked to develop services for the agriculture sector, focusing on under-served smallholder farmers. Econet owns the EcoFarmer suite of services. With the support of partners, Econet

- drives the development of bundled services
- invests in the development of the technical platform
- markets and distributes
- directs scaling and expansion

To date over 200,000 smallholder farmers have opted for the EcoFarmer suite of services.

- All-round skills and knowledge of the two crosscutting sectors: agriculture and telecommunications.

### Governance and policy environment

In the three countries, various working groups have been set up to drive the identification of the services to be bundled depending on the needs of the smallholder farmers, content of the advisory services, nature of the bundle, and the distribution of the bundle of services. The working groups comprise representatives from government ministries, private sector, and farmer union representatives.

An encouraging policy environment and an enabling regulatory environment drives success. This is achieved through the inclusion of policy-makers in all stages of the project. The ministry of agriculture all three countries was continuously engaged and was encouraged to participate. The participatory approach was employed when the programme started – key stakeholders in the industry were given the opportunity to participate in the development and delivery of the bundled services to smallholder farmers.

### Target audience

Most agriculture workers in the world are women, therefore the programme has specific interest in women farmers. Targeting women has the highest potential to impact household income and livelihoods.

### Implementation information

The following is a summary of the strengths, weaknesses, and challenges of delivering rural advisory services through a bundled mobile solution.

### ICT considerations

The mobile phone has been deemed a transformative tool in economic development due to its affordability and penetration of hard to reach markets. The approach therefore centres on using mobile technology and other ICT platforms to package the bundled services and conveniently deliver rural advisory

#### Indonesia Focusing on women

Improved farming techniques of women have a greater chance of impacting household food security. The Agri-Fin Mobile programme in Indonesia specifically targets women to ensure uptake of bundled services. Training of trainers was provided to 70 female extension workers, who then could train up to 10,000 female farmers. The training content includes mobile and agricultural information, financial services, and financial literacy. The training uses both classroom and digital channels.

In order to roll out the training and achieve targeting of female farmers, the program entered into partnerships with extension offices in three districts. In each district, the head of the extension office assigned a local coordinator to work with the master trainer and coordinate with female extension workers in the sub-district extension offices.

#### Uganda Strategic partnerships

Agri-Fin Mobile in Uganda works to increase access and utilisation of agricultural information and financial services to smallholder farmers to increase productivity and incomes through mobile phones. The main programme approach is through strategic alliances with shared values and sustainable business models.

#### Using ICTS to improve farmer decision-making – Farmis platform

Farmis is an ICT business solution that helps farmers with record keeping. Farmis helps farmers and farmer groups with programmes that assist them to automate their business processes. They provide clients with market information such as commodity market prices, marketing offers and opportunities, advisory services, and credit and financial tracking mechanisms. This video explains how Farmis works: <https://www.youtube.com/watch?v=vlu-1xQ6VHU&feature=youtu.be>

Strengths	Weaknesses	Challenges
<ul style="list-style-type: none"> <li>• low cost access to rural advisory services</li> <li>• bundling encourages uptake of advice, and services can reach scale</li> <li>• allows farmers exposure to other services that can improve productivity</li> <li>• bundle provides greater value for money</li> <li>• mobile solution complements existing extension services</li> <li>• added convenience of accessing multiple services on one platform</li> </ul>	<ul style="list-style-type: none"> <li>• opens floodgate of demands on single platform</li> <li>• levels of commitment of ecosystem partners can vary and impact bundled services</li> <li>• failure of one service has potential to impact rest of the suite of services</li> <li>• general product and scaling is highly dependent on commitment of partners</li> </ul>	<ul style="list-style-type: none"> <li>• building a business model around bundled services and rural advisory services specifically is challenging</li> <li>• pricing of bundle taking into account the nature of the target market is difficult</li> </ul>

services. It is of paramount importance that such low-cost convenient tools are considered in delivering rural advisory services.

### Key lessons

Rural advisory services should not be viewed in isolation. If the objective is to improve smallholder income and livelihoods, there are other constraints that require attention. Bundling these services can build an appreciation of and increase uptake of critical services that address productivity constraints.

### Costs

The costs of developing and rolling out bundled services that include rural advisory services vary depending on the product design. The branding and marketing costs are significant as the target market is sparsely distributed. The technology is an added cost, as the mobile platform should allow for registration, profiling of farmers, and special guided menus to access bundled services and other applications. These costs can be significantly lower if the partner already had existing infrastructure that can support the bundled services.

### Further reading

The economic landscape of digital agri-finance in July 2014 by CTA (<http://blogs.cta.int/2014/07/16/economic-landscape-digital-agri-finance/>)

Working to give female farmers in Indonesia access to agricultural information and financial services. Posted in Tuffsgloballeadership.org in July 2013 (<http://www.tuffsgloballeadership.org/blog/working-give-female-farmers-indonesia-access-agricultural-information-and-financial-services>)

Agri-Fin Mobile's Gender Analysis Highlights Female Farmer's Vital Role in Production, Limited Access to Agriculture Information. Posted in e-Agriculture.org in September 2013 (<http://www.e-agriculture.org/blog/agri-fin-mobile%E2%80%99s-gender-analysis-highlights-female-farmer%E2%80%99s-vital-role-production-limited-acce>)

How Do Smallholder Farmers Access Information? Posted in CGAP.org in January 2014 (<http://www.cgap.org/blog/how-do-smallholder-farmers-access-information>)

Breaking the Agricultural Financing Myth through Supply Chain Viable Business Model, in PISAgro News (a quarterly newsletter), November 2013 (<http://pisagro.org/wp-content/uploads/2014/01/PISAgro-Newsletter-V.pdf>)

Working with Smallholder Female Farmers in Improving their Access to Agriculture Information and Financial Services, in PISAgro News (a quarterly newsletter), February 2014 (<http://pisagro.org/wp-content/uploads/2013/10/PISAgro-Newsletter-6.pdf>)

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This content was originally published in August 2014 as GFRAS Global Good Practice Note 3, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by Agri-Fin Mobile program under Mercy Corps with financial support provided by:

- Swiss Agency for Development and Cooperation (SDC)

This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

# mExtension – mobile phones for agricultural advisory services

Raj Saravanan and Bhattacharjee Suchiradipta

## Introduction

In the last few decades, information and communication technologies (ICTs) have provided immense opportunities for the social and economic development of rural people, and some technologies have surpassed others. Mobile telephony is one such technology that has developed significantly in the past few years, and the subscription rate in developing countries has gone up from 22 per 100 inhabitants in 2005 to 91.8 per 100 inhabitants in 2015. Mobile technology goes beyond geographic, socio-economic, and cultural barriers and this large increase in mobile subscriptions, along with the recent roll out of 3G and 4G technology, can play a big role in the development of rural people. Mobile phones are devices that can create, store, access, and share information anytime, anywhere. But they are more than that. When teamed with extension and advisory services, they can help improve the livelihoods of rural people by getting much needed timely information to their fingertips at potentially low cost. So-called mobile-based extension and advisory services (mExtension, see Box 1) enable value-added services, such as mobile agro-services and machine to machine services,<sup>1</sup> which help farmers monitor their crops and farm machinery through mobile phones. While value-added services are generally fairly accessible to all the farmers in rural areas, machine-to-machine

services are more cost intensive and require infrastructure that is often not present in developing countries.

## Philosophy and principles

Mobile-based extension and advisory services (mExtension) are location specific and, at the same time, able to transcend geographic limitations.

The principles of mExtension are as follows:

- **Content:** The content and design should be user-centric. Combining value-added services and mobile financial services can be both attractive and sustainable.
- **Delivery mechanism:** The business and pricing model, mode of delivery (text, interactive voice response, call, pictures, videos, etc.), and choice of application-based versus normal access should depend on maximising client access and not the benefit of the service provider.<sup>3</sup>
- **Reach and interaction:** Rigorous awareness-raising programmes should be conducted to increase reach, and the services should be interactive to ensure clients' needs are being met.
- **Communication, not just advisory:** mExtension should encourage increased dialogue between the stakeholders in agricultural innovation systems rather than providing

### Box 1. mExtension

There are various modes – push and pull SMS, interactive voice response, mobile apps, and so on – through which mExtension services are provided either individually or in combination. While SMS and interactive voice response services are accessible from both conventional and smart phones, mobile apps require smart phones. Services can be free or subscription-based. Cost does not seem to affect popularity as shown by services such as IKSL (<http://www.iksl.in>) in India, iCow (<http://icow.co.ke>) in Kenya, Kilimo Salama (<https://kilimosalama.wordpress.com>) in Kenya and Rwanda, and e-Krishok (<http://wp.ekrishok.com>) in Bangladesh. Mobile-based advisory services are mostly targeted at farmers and the rural population but collaboration

among stakeholders in agricultural innovation systems (AIS) for providing content is not unknown. The advisory services also vary from providing solely agricultural information (e.g. Gobi Sahana Sarana in Sri Lanka) to providing micro insurance to rural people (Kilimo Salama in Kenya and Rwanda), real time market information (e-soko (<https://esoko.com/>) active in 10 African countries), farmer-specific fertiliser recommendations (NMRiceMobile in Bangladesh, China, India, Indonesia, Phillipines and West Africa) or integrating agricultural and weather information along with entertainment to attract large numbers of rural people (Nokia Life Tools).<sup>2</sup>

1 Stryjak, J., Sharma, A., Lucini, B.A. and Kechiche, S. 2015. *Agricultural machine-to-machine: A platform for expansion*. Available at: <https://gsmintelligence.com/research/2015/03/agricultural-m2m-a-platform-for-expansion/479/>

2 Suchiradipta, B. and Saravanan, R. 2014. Global review on mobile phone applications for agricultural extension. In: Saravanan, R. (ed.) *Mobile phones for agricultural extension: Worldwide mAgri innovations and promise for future*. New Delhi, India: New India Publishing Agency.

3 Saravanan, R. and Suchiradipta, B. 2014. Mobile phone applications for agricultural extension in India. In: Saravanan, R. (ed.) *Mobile phones for agricultural extension: Worldwide mAgri innovations and promise for future*. New Delhi, India: New India Publishing Agency.



farmers with information. This will facilitate capacity development of farmers and pass farmers' knowledge and experience back to the development arena.

- **Sustainability:** Both financial and infrastructural sustainability can be ensured by using a profit-based model of information delivery.
- **Integration of technology:** Different formats such as web portals, videos, voice, pictures and animations, etc. can be easily accessed from mobile phones, thus making integration of technology easier and efficient, and increasing the scope of mExtension.
- **Reassessment vs development:** Often it is better to build on existing services rather than coming up with new ones. This is likely to be more sustainable as the client is familiar with the services and the service provider has infrastructure to build upon.<sup>4</sup>
- **Associated services:** mExtension can only go so far in enabling economic development of the rural community. Infrastructure like roads, electricity, education, market and credit access, and so on are also required. So investments in these are at least as important as timely information delivery, sometimes even more so.

## Implementation

The following should be taken into account to ensure long-term success:

- **Baseline survey:** A baseline survey is needed to understand the information needs of rural clients, the type of mobile phones they use, and the pattern of mobile phone use.
- **Developing partnerships:** Depending on the type of service provided, stakeholders will vary but partnerships among different stakeholders aid standardisation of services, reduce integration issues, and help to segment the service providers and target users.<sup>5</sup> Partnerships with network providers are very important for extension organisations to provide services catering to the needs of the client.
- **Content Management System (CMS) and device dependency:** A CMS enables multiple users to have different permission levels for collecting, managing, and publishing of information in any form or medium. The service provider needs to have expertise on the CMS to select and upload suitable content. The content should be equally accessible through smart and conventional phones, the former being developer-friendly and the latter being more popular in emerging markets.
- **Infrastructure:** Infrastructure like servers, mobile phones, PCs, etc. should be in place before the project is formally implemented. Providing smartphones to selected farmers/ coordinators can ensure timely information delivery (e.g. m4AgriNEI (<http://www.m4agrinei.in/>) in India, SIA-Huaral (<http://www.apc.org/en/node/9477>) in Peru).<sup>6,7</sup>
- **Staff selection:** While dedicated staff are needed for large scale services, text-based services can be handled by extensionists.
- **Scalability and sustainability goals:** Sustainability is a problem with ICT projects and so there need to be clear goals and benchmarks for financial sustainability of the project without depending on a funding agency.
- **Adding the extras:** Mobile apps, call centre services, and peer-to-peer connection facilities with online and offline accessibility can be of added advantage.

## Capacities required

Extensionists need to be well versed in the use of mobile devices, but more importantly, should be aware of their clients, as missing critical information can be a serious flaw.<sup>8</sup>

For clients, the most important capacity issue is accessibility to mobile phones. In rural areas of low- and middle-income countries mobile phone subscription still has a long way to go, and women specifically are yet to benefit from the technology. The number of unconnected women is still significantly high and of those who have access to mobile phones, many have never sent an SMS.<sup>9</sup> Technical illiteracy is also a major challenge

4 Addom, B.K. and Moy, L. 2014. Mobile phone applications along the agricultural commodity value chain. In: Saravanan, R. (ed.) *Mobile phones for agricultural extension: Worldwide mAgri innovations and promise for future*. New Delhi, India: New India Publishing Agency.

5 Stryjak et al. 2015. Op. cit.

6 Saravanan and Suchiradipta. 2014. Op. cit.

7 Barrantes, R. and Aguero, A. 2014. Mobile phone applications for agricultural extension in Peru. In: Saravanan, R. (ed.) *Mobile phones for agricultural extension: Worldwide mAgri innovations and promise for future*. New Delhi, India: New India Publishing Agency.

8 Hatt, T., Gardner, C., Wills, A. and Harris, M. 2013. Scaling mobile for development. London, UK: GSMA. Available at: <https://gsmaintelligence.com/research/?file=130828-scaling-mobile.pdf>

9 GSMA. 2015. Bridging the gender gap: Mobile access and usage in low- and middle-income countries. London, UK: GSMA. Available at: <http://www.gsma.com/connectedwomen/resources-2/gender-gap/>

**Table 1. Strengths, weaknesses, opportunities, and challenges**

Strengths	Weaknesses	Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Portability</li> <li>• Personalised information</li> <li>• Two way communication</li> <li>• Timely delivery of information and alerts</li> <li>• Location specificity</li> <li>• Media mix</li> <li>• Increased access to public info via RAS<sup>10</sup></li> <li>• Both online and offline access</li> <li>• Free or minimum charges for access</li> <li>• Broad-based information coverage</li> <li>• Improved monitoring and evaluation of extension services through efficient communication system</li> </ul>	<ul style="list-style-type: none"> <li>• Using mobile phone for accessing agricultural information is still not very popular</li> <li>• Technical illiteracy among clients and extensionists limits scope</li> <li>• Minimum use of smart phones by rural farmers, which limits farmers' access to web portals, videos, animations, etc.</li> <li>• Cost</li> <li>• Relevancy of information in a personal context</li> <li>• Amount and type of content delivered is limited</li> </ul>	<ul style="list-style-type: none"> <li>• Mobilising women</li> <li>• Encouraging an entrepreneurial culture among young people through developing new apps and services</li> <li>• Partnership among multiple stakeholders increases the opportunity for better service<sup>11</sup></li> <li>• Wide reach</li> <li>• Group-based approach<sup>12</sup></li> <li>• Increasing mobile phone penetration in rural areas of low- and middle-income countries</li> <li>• Low cost of initial investment</li> <li>• Improved market access and protection against climatic shocks</li> </ul>	<ul style="list-style-type: none"> <li>• Reaching resource-poor, small-scale, and marginal land holding farmers</li> <li>• Scaling up of pilot projects</li> <li>• Long-term sustainability</li> <li>• Authenticity of content</li> <li>• Relevant content development</li> <li>• Access to infrastructure (roads, market, credit, electricity, and so on) and lack of network coverage</li> <li>• Inclusion of women</li> <li>• Awareness creation on potential of mobile phone in RAS</li> <li>• Lack of research on impact</li> </ul>

in active use of mobile phones and this issue needs to be addressed before rolling out mExtension services. Rigorous awareness-raising and training on using mobile phones to access the service are also needed for proper utilisation of the potential mExtension has to offer.

### Strengths and weaknesses

Table 1 shows the strengths and weaknesses of mExtension.

### Governance

In mExtension, the solution provider and service provider need to keep information updated regularly. Where funding agencies are involved, transparent fund flow is necessary along with internal monitoring and eventual external evaluation. Since numerous stakeholders are involved, with different roles, there should be regular follow-up of work done to ensure proper coordination.

### Costs involved

Costs will vary depending on the scale of the project, services provided, and model, but generally fall under the following headings:

- infrastructure development and procurement
- staffing
- awareness creation and training
- maintenance of infrastructure

- costs to generate, curate, evaluate, localise and customise information.

While the cost of setting up infrastructure for mExtension can be expensive compared to other ICT4RAS,<sup>13</sup> the scope for revenue generation is also higher thus giving them better scope for sustainability, a limitation in many ICT4RAS projects.

### Best-fit considerations

- **Target group:** mExtension can facilitate creation of scalable, replicable, and commercially sustainable advisory services for rural clients. Efforts should be made to target women to benefit from mobile technology.
- **Innovations:** Adapting services depending on client needs, preferences, and socio-economic conditions requires constant innovation.
- **Ecological and institutional setting:** While ICT infrastructure is needed for organisations, clients need to have access to mobile phones and network services to access the advisory services.

### Evidence of impact

Mobile-based advisory services have been found to have a positive impact across the globe. In countries like India, Niger, and Uganda, mobile phones have reduced producer price dispersion and ensured higher market participation by

10 Bolarinwa, K.K., Oyeyinka, R.A. and Banmeke, T.O. 2014. Mobile phone applications for agricultural extension in Nigeria. In: Saravanan, R. (ed.) *Mobile phones for agricultural extension: Worldwide mAgri innovations and promise for future*. New Delhi, India: New India Publishing Agency.

11 Hatt *et al.* 2013. Op. cit.

12 Bolarinwa *et al.* 2014. Op. cit.

13 Saravanan, R., Sulaiman, R.V., Davis, K. and Suchiradiptha, B. 2015. *Navigating ICTs for extension and advisory services*. Note 11 Global Good Practice Notes for Extension and Advisory Services. Lindau, Switzerland: GFRAS.

farmers. They have also helped to reduce wastage, increase the number of transactions, and reduce the costs of searching for markets and of transportation. Information accessed through mobile phones has strengthened local livelihoods and helped to preserve natural resources, and has also increased general awareness and networking opportunities. Also, targeted at women, mExtension can significantly improve their income and livelihood opportunities, as has been the case in Bangladesh.<sup>14,15</sup>

### Potential scalability and issues of sustainability

Financial sustainability is a major issue in mExtension. While paid services are still subject to sceptic opinions, there is much evidence of mobile-based paid advisory services that are being subscribed to by large numbers of rural people in developing countries. Establishment costs do need to be externally funded, but at later stages a profit-oriented model has the advantages of being scalable, sustainable, and client need-based compared to services offered free of cost.

### Further reading

e-Agriculture.org: <http://www.e-agriculture.org/mobile-telephony-rural-areas>

GSMA. 2014. *Mobile policy handbook*. Available at: <http://www.gsma.com/publicpolicy/handbook>

GSMA: <http://www.gsma.com/>

World Bank. 2011. *ICT in agriculture: Connecting smallholders to knowledge, networks and institutions*. World Bank, Washington DC.

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 17, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

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14 Mittal, S. and Mehar, M. 2014. Socio-economic impact of mobile phone based agricultural extension. In: Saravanan, R. (ed.) *Mobile phones for agricultural extension: Worldwide mAgri innovations and promise for future*. New Delhi, India: New India Publishing Agency.

15 Dickert, M. 2011. Mr Yunus, telephone ladies and the development jigsaw. Available at: <https://globalprosperity.wordpress.com/2011/03/24/mr-yunus-telephone-ladies-and-the-development-jigsaw/>

# Using radio in agricultural extension

Sheila Rao

## Philosophy and principles

Radio is considered one of the oldest information technologies, and is one of the most popular in the developing world, partly due to its accessibility and affordability. While many rural people own a radio, those who do not may access programming through family, friends, or neighbours. Traditionally, radio has been seen as a one-way communication tool, providing information, news, and entertainment to listeners. However, when integrated with other communication tools (such as mobile phones) it can serve as a two-way platform for dialogue, to further discussions about topics that interest listeners, and to create entertaining and interactive programmes. For farmers, radio has the potential to help connect them to technical specialists, policy-makers, other farmers, suppliers, or buyers. Radio, and particularly participatory, demand-driven radio programming as a tool for extension, complements existing agricultural information systems that emphasise interaction among stakeholders (farmers, public and private knowledge brokers, market actors, researchers, policy-makers, the financial sector, etc.) where no single actor is the expert.<sup>1</sup> More so, radio programmes in vernacular languages provide new communication channels and space for dialogue for communities in more remote areas, or of varying literacy levels.<sup>2</sup>

Radio programmes for farmers have a long history in several regions, including Latin America, West Africa, as well as parts of Europe, and North America. Most recently, the Food and Agriculture Organization of the United Nations developed guidelines for communication for development that directly pertain to current agricultural information system gaps and needs.<sup>3</sup> The guide mentions the role of radio as a complementary tool to existing approaches in reaching and interacting with farmers. Traditional applications of radio relied on a 'top-down' approach where extension services or research institutions develop the materials and content for the programmes and pay for airtime for radio stations to broadcast. More recently, broadcasters have begun to play a more active role in creating content and conducting on-farm interviews with farmers. In participatory radio, broadcasters

work in collaboration with extension services, researchers, government representatives, and farmers.<sup>4</sup> Findings from the African Farm Radio Research Initiative (AFRRRI) and other evaluation studies showed that farmers' listening frequency is directly correlated with an increase in knowledge of a particular agricultural practice that was discussed in a participatory radio programme.<sup>5</sup>

Radio programmes can cover a range of topics and integrate scientific information (appropriately repackaged in various formats) with consideration of, and reference to, the social and cultural context, knowledge, and interests of the intended audience. Radio programmes can serve a number of communication functions including: enabling active listening (to find out farmers' preferences, needs, opinions, etc.); raising awareness of services, events, or programmes; disseminating information and facilitating discussion about the information; hosting campaigns on behaviour change topics (disease prevention or adoption of a new variety); and initiating networking between farmers.

## Implementation

With the right support, including an enabling governing structure, thoughtful and inclusive design processes, and relevant and appropriate use of technology, radio has the potential to enhance existing extension services, and to integrate both public and private sector partners in an effective response to the communication needs of farming families.

Despite these opportunities, radio is still, in practice, often considered part of the dissemination plan rather than an integral component of the extension service. The challenge is packaging information into good quality radio programmes. With more training, broadcasters can help other agricultural development actors to communicate effectively and accurately with farmers.

There are several factors to consider when implementing radio as part of an extension service.

1 GFRAS. 2012. *Investments in agricultural extension and information systems*. Available at: <http://www.g-fras.org/fileadmin/UserFiles/Documents/Frames-and-guidelines/Financing-RAS/Investments-in-Agricultural-Extension-and-IS.pdf>

2 Chapman, R., Blench, R., Kranjac-Berisavljevic, G. and Zakariah, A.B.T. 2003. *Rural radio in agricultural extension: The example of vernacular radio programmes on soil and water conservation in N. Ghana*. Network Paper No. 127. Agricultural Research & Extension Network. Available at: <http://www.odi.org/resources/docs/5200.pdf>

3 Acunco, M., Pafumi, M., Torres, C. and Stella Tiroi, M. 2012. *Communication for rural development sourcebook*. Rome, Italy: Food and Agricultural Organization. Available at: <http://www.fao.org/3/a-i3492e.pdf>

4 Chapman, 2003. Op. cit.

5 Farm Radio International. 2010. *Agricultural radio that works*. Available at: <http://www.farmradio.org/wp-content/uploads/Farm-Radio-Agriculture-Radio-That-Works.pdf>

**Radio broadcasters and their affiliated stations are partners in extension services:** It is critical to identify effective criteria for selecting radio stations to partner with, to ensure that the radio programmes are well received and trusted by the listeners. Community, private, or public stations can all be considered, depending on the targeted reach, scale, and resource availability of the particular extension service. Community stations offer local, contextualised programming, while private stations are often better resourced and could offer more interactive, technologically driven programmes. Stations that broadcast nationally offer broader topics of discussion such as agricultural policy, and local and international market information.

**Design of radio programmes:** The participatory design process is inclusive and involves multi-stakeholder engagement. It can also be directive, where communication specialists, together with extension and agricultural scientists work together to develop the content before testing it with the targeted audience. Conducting initial audience assessment on preferred formats, timing, and information needs will help to shape the programme around farmer needs. The design process should also consider the involvement of appropriate 'knowledge brokers' (researchers, extension staff, private sector agents, farmers, etc.). Researchers provide new findings or proven technologies that support greater productivity and gains for farmers. Private sector agents provide avenues for farmers to connect with certain markets (local, regional, international). Extension staff often connect with government agencies and non-government organisations (NGOs).

The interactive component will need to consider both the listeners and the station to ensure that there is a consistent and timely feedback system in place. In some cases, it might be useful to facilitate the creation of listenership strategies; through programme sharing (recording and sharing copies of programmes), group listening (sourced from existing farmer organisations), or training on use of smart phones to help with connecting to radio programmes directly.

**Broadcasting programmes:** Timing, duration, and schedules of the programmes require careful consideration when planning with extension. Certain time slots are better for farmers, such as evenings or weekends, when they are home and have finished all other work. Women may prefer pre-recorded programmes or opportunities to listen as a group if they have no access to a radio at home. Monitoring and evaluation of radio requires ongoing qualitative and quantitative data collection and analysis in order to capture both the intended and unintended consequences of participatory, demand-driven radio extension services.

## Capacities required

There are several areas of capacity that require support for radio to be used to its full potential. First, radio stations vary in their infrastructure, and the kinds of equipment, training, and support available that will enable them to work with farmers or through other advisory services. Assessments of needs and procurement of the right equipment might be necessary. Broadcasters may appreciate low-cost recorders such as mp3 players to help them produce programmes in the field. Second, radio station staff will need to develop particular skills to work directly with extension services and address the needs of farmers. These skills include the technical use of phones to call listeners or receive calls from listeners, using voice-based systems; gaining knowledge about agricultural practices; and having the people skills necessary to bridge the gap between specialist-level knowledge and the grassroots rural vocabularies of their listening publics. Rural communities may also need training on how to use phones to call and receive calls, or record messages for the radio stations. Farm Radio International used its experience over the last 10 years to develop a tool called VOICE, which enables radio stations to consider key factors, such as consistency, relevance, and convenience that can help them to develop high quality programmes for farmers (Figure 1). With training, and in collaboration with other agricultural actors, radio broadcasters can play an active role in extension, beyond simply facilitating information sharing.<sup>6</sup>

## Costs

The costs vary of involving radio programmes and radio stations as partners in agricultural extension programmes. Many programmes try to include radio primarily as a dissemination tool, and pay for airtime. This can be expensive if the broadcasting coverage is nationwide. Community stations, with localised coverage, may not charge as much for airtime. Training, technical capacity, and knowledge sharing also have cost considerations. These activities can be conducted through face-to-face meetings, facilitated remotely, or as blended face-to-face and technologically facilitated activities, each method having its own cost implications. Overall, the cost per farmer for using radio as part of an extension service (where one community radio station can reach as many as 200,000 households) is significantly lower than other strategies such as regular site visits, use of printed media, and facilitating regular and ongoing engagement with many communities. For example, in Ethiopia, a four-month radio programme on *teff* (a staple crop in Ethiopia), which reached four regions cost just US\$0.38/farmer.<sup>7</sup> Community stations can be established for as little as US\$20,000 (including costs of equipment, permits, and other essentials).

6 Gilberds, H. and Myers, M. 2012. Radio, ICT convergence and knowledge brokerage: lessons from sub-Saharan Africa. *IDS Bulletin*, 43(5): 76–83.

7 Farm Radio International. 2014. *Radio for Ethiopian smallholder staples development*. Outcome Evaluation Report submitted to the Bill and Melinda Gates Foundation, Ottawa.



Figure 1. VOICE standards for effective farmer radio programming

### Strengths and weaknesses

Radio provides an open, two-way dialogue that is inclusive, accessible, and affordable. It has the potential to reach vulnerable and resource-poor communities, while also establishing a feedback and monitoring system through the use of other technologies. It provides an opportunity for information and resource provision at a large scale; yet can also be available in local languages.

There may be considerable variability in the capacities of radio stations to work closely with extension and other agricultural development actors. Many community stations may not have

the means to sustain the programme beyond initial project duration or funding cycle. Commercial stations may not be trained in using the appropriate language for a farming audience. It certainly does not replace face-to-face interaction and is almost always more effective when it is a component of a larger extension and communications strategy.

### Best-fit considerations

Radio works as an effective extension tool when it is part of a broader communication strategy for farmers, and when radio broadcasters participate in the design and production of the content, together with specialists and extension staff. In particular the following are key considerations:

- **Target group (e.g women, young people):** For women farmers, radio on demand approaches may be effective, in that they can choose when to listen to the programmes each week through pre-recorded mp3 versions delivered to women's groups. Some groups may be able to purchase radio sets. Young listeners may be motivated by interactivity and integration of smartphone use. For instance using text messages, voice messaging, or beep-to-vote messages (see <http://www.farmradio.org>) may facilitate their participation. Other disadvantaged groups could be given certain listening and interactive tools, such as solar powered radios or mobile phone airtime in exchange for their input into the programmes and dialogue.
- **Type of agricultural innovation:** Different radio formats cater to different innovations. Targeted radio campaigns that aim to better inform farmers' decision-making processes can support the adoption of new crop varieties, biofortified crops, or new labour techniques. Broader, more complex issues such as climate-related impacts, marketing, linking different actors in the value chain (such as buyers, sellers, processors, and transporters), nutrition, and maternal health related challenges require further discussion and a variety of formats that will facilitate key actors in each area to connect through radio and extension dialogue. Radio can help with a more integrated approach to assisting rural, agricultural-based communities, and where face-to-face extension is limited.
- **Ecological setting:** Some mountainous landscapes block certain radio signals and could therefore be difficult to reach using national radio stations. However, this is becoming less of a problem due to continued installation of radio towers in rural and remote areas. Some countries offer internet-based radio stations that do not rely on the radio tower infrastructure to broadcast.
- **Institutional setting:** Commercial, public, or community radio stations all provide various benefits to existing and emerging extension services depending on the region being targeted. Programmes can be highly localised using community stations for locally available information, or can be presented at a regional or national scale, to expand certain technologies across the country and increase the accessibility of a certain crop.

## Governance

The financial, political, and social capital available to radio stations directly impacts the kinds of programmes and messages that are directed towards farmers. For example, community managed and funded stations may emphasise local context and resource availability. Commercial and private stations may be more inclined to enlist agro-dealers or businesses as sponsors of programmes, which may lead to bias in the preparation of programmes. Public stations, funded through government agencies, may reinforce national policies and may not accommodate the locally specific needs of rural communities.

Radio-based extension activities, particularly interactive programmes, can provide the following governance roles and services:

- **Provision of feedback on government initiatives:** Assistance in monitoring the uptake and impacts of government policies on land use, crop specialisation, etc. (including potential unintended consequences).
- **Feedback on land grabbing and land disputes:** Radio can offer an inclusive and safe venue for discussing sensitive issues around land and land use changes between various stakeholders, particularly if listeners can contact the station anonymously.
- **Rapid information on natural disasters, food security, climate-related issues:** In Liberia and Sierra Leone, local radio stations played a key role in delivering information to remote villages about Ebola prevention, while also tracking the rate and locations of infection, and advising where to seek treatment.

## Evidence of impact and potential scalability

Purdue University, USA, showed that the use of radio increased the level of interest in, and adoption of, triple bagging of cowpeas by farmers in Nigeria.<sup>8</sup> Farm Radio International's participatory radio campaign strategy continues to show positive results in both increase of knowledge and uptake of particular agricultural practices presented through radio with support from existing NGO and government interventions.<sup>9,10</sup> In Ethiopia, over 50 percent of farmers who listened regularly to the programmes increased their knowledge of *teff* cultivation.

Farm Radio International's ongoing work demonstrates the value of engaging radio stations as active partners in extension. They have shown that radio has helped to increase demand

for planting materials, and has led to an increase in farmers testing new innovations. Scalability is evidenced through the ongoing work of Farm Radio International,<sup>11</sup> as well as previous radio work through Mediae (mediae.org) and BBC Media Action (<http://www.bbc.co.uk/mediaaction>), and through their strategies for working with existing national extension services and training radio stations on producing quality radio programmes. Increasing the use of translation tools and strengthening networks among radio station staff, ministries working in the agricultural sector, researchers, donor agencies, and other key actors could help to build a more sustainable model for radio communication, integrated with extension services.

## Training materials

Radio journalism and technical skills

<http://onmedia.dw-akademie.de/english/?p=687>

Interactive radio for agricultural development projects: a toolkit for practitioners

<http://ictforag.org/toolkits/video/index.html>

Mass media in extension

<http://www.fao.org/docrep/t0060e/T0060E05.htm>

Farm Radio International (2015) Using VOICE standards to improve farmer radio

<http://www.farmradio.org/radio-resource-packs/101-getting-and-using-audience-feedback-and-evaluating-radio-programs/use-voice-standards-to-improve-your-farmer-program/>

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 18, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

8 Moussa, B., Otoo, M., Fulton, J. and Lowenberg-DeBoer, J. 2011. Effectiveness of alternative extension methods through radio broadcasting in West Africa. *The Journal of Agricultural Education and Extension*, 17(4): 355–369.

9 Farm Radio International, 2010. Op. cit.

10 Farm Radio International, 2014. Op. cit.

11 Farm Radio International, 2010. Op. cit.

# Videos for agricultural extension

Jeffery Bentley, Ataharul Chowdhury, and Soniia David

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## Introduction

Videos, especially digital ones, are a relatively new technology. Videos may help to meet the challenges of disseminating information to farmers and reaching the poor, marginalised, women, and young people. Some uses of video in agriculture include raising awareness, stimulating demand for support, farmer-to-farmer extension, training on agricultural innovations, stimulating creativity, and as a tool for documenting and monitoring and evaluation (M&E).

The different types of video include documentary (describing events), institutional (promoting a project or an organisation), instructional (developed mainly by researchers with limited input from farmers), farmer-learning videos (made with farmers), and participatory videos (made by farmers).

## Philosophy and principles

Videos as agricultural extension and learning tools should be based on the following principles:

**Relevant content:** Video content must be based on farmers' needs and scientific principles. Even a video that introduces a new practice should involve farmers who have already tried the practice and made it farmer-friendly.

**Farmers first:** Involve farmers in the development of the video, depict them in the video (e.g. demonstrating ideas, explaining why things work), and involve them in the dissemination to ensure that their views are represented.

**Focus content on principles, encourage experimentation:** To ensure that videos have wider relevance beyond a

few communities, the content should present a menu of technical options that farmers can experiment with. Explain the underlying principles of each innovation to encourage discovery learning.

**Quality:** Videos must have good quality audio and visual, a solid story structure, and a relevant message in order to capture the audience's attention, engage their thinking, and stimulate learning.

**Combine with other methods:** For training, information, and knowledge sharing, it may be necessary to combine video with other extension approaches such as demonstrations, group discussion, and printed materials.

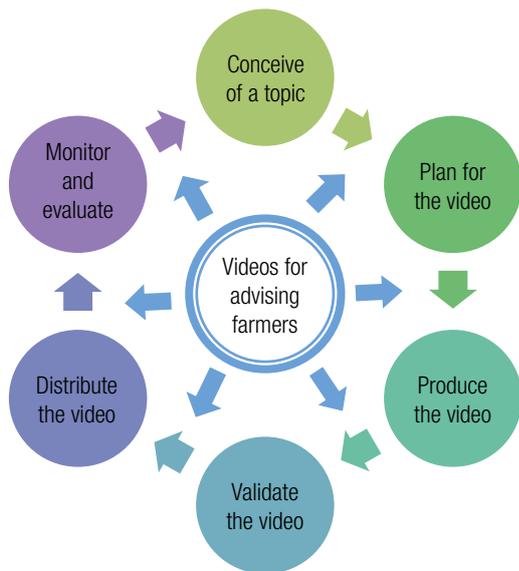
**Institutionalisation and policy:** ICTs as extension tools need to be institutionalised within rural advisory services through appropriate policies and regulatory frameworks.

## Implementation

**Producing a video:** Before you produce a video, think about how you plan to disseminate and use it. There are six basic steps to producing any type of video: conceiving a topic, planning, producing the video, validating, distribution, and monitoring and evaluating (Figure 1). Who plays the lead role in each step will depend on what type of video you want to develop, but all videos for agricultural extension and learning will involve scientific organisations, partner organisations (e.g. non-government organisations (NGOs), extension services, farmer organisations), farmers, and other rural stakeholders. If farmers will be making the film themselves, it will be necessary for the video production team to work with film professionals who will provide guidance and train them on basic film-making. Scientists, extension staff, and film professionals should always listen carefully to farmers so that the finished video reflects their perspectives and conveys a message that is technically accurate.

Focus each video on a single topic. Prepare for filming by writing a story board or a draft script based on what you know and what you learn in the field. Videos can be just a few minutes long, and shouldn't be longer than 20 minutes. Ensure that a diversity of farmers (women, men, the poor, youth etc.) and rural people (landless, market sellers, etc.) appear in the video.

After filming, edit the clips and order them according to your story board or script. Then you can add narration, music,



**Figure 1. Steps in making a video**

titles, and end credits. Keep text to a minimum, e.g. avoid sub-titles. Once you have a first draft of the video, show it to farmers, extension agents, scientists, etc. to ensure that farmers understand the message, that it includes logical and scientific explanations, and that the visuals help explain the content.

Once a video is finalised, it can be translated into local and international languages and printed onto a DVD. Videos may also be distributed on USB sticks, tablets, mobile phones (not just smart phones), pico projectors (pocket-sized projectors that can be run from smart phones or tablets), and smart projectors.

**Using videos for extension:** Videos can be used for many purposes including disseminating information, training, and encouraging innovation. Videos can be distributed in many ways: directly to farmers, or through extension services, radio stations, value chain actors (e.g. buyers or processors), and farmer organisations. Videos can be screened in rural communities (through group meetings, village shows, video shacks etc.) with the help of community-based facilitators, extension agents, or others. Video viewing clubs, which bring together a group of farmers led by a facilitator, are a structured approach for video-based training. When screening videos for the public, you will need to identify a suitable venue and have the necessary equipment such as a power source, video playing equipment, and some sort of screen.

**Monitoring and evaluation:** Continuous monitoring and impact assessment of video are important functions that can be carried out in many ways (field studies, surveys, or by software that monitors viewing).

## Capacities required

The number and type of people you need to produce a video will depend on who will lead the production (film professionals or farmers). For videos developed by film professionals, the team should consist of a camera person, someone who understands the local farming system, and one who knows the community. The team meets with farmers in various communities. Videos developed by farmers themselves require a team of a dozen farmers supported by several video professionals (to facilitate meetings with farmers and train them in using the video equipment). Depending on how videos are to be used, there may be a need to develop the capacities of rural service providers or farmers to facilitate their use at community level.

## Costs

Video equipment is like buying a car; the hardware can be used many times, and the more you use it, the more you get for your money. Basic equipment may cost as little as US\$500 (see Box 1). You can keep costs down by using free software and less expensive equipment (e.g. flip camera, smartphone, iPad etc.). Better equipment produces better quality videos that people want to watch.

The cost of using video as an extension tool will depend on how you use it and how many people you reach. For example, you can reach each viewer for US\$0.50 or less when farmer-learning videos are distributed on DVDs for villagers to watch without facilitation, or if videos are broadcast on television. On the other hand, a structured group-based training approach lasting six months may cost about US\$78 to train one farmer.<sup>1</sup>

## Strengths and weaknesses

### Strengths

- Allows verbal and visual communication, making it possible to explain abstract concepts and underlying principles.
- People remember more of what they see than of what they hear.
- Helps to standardise technical information for accurate transmission.
- A process that happens over several weeks can be shown in 15 minutes.
- Presenting a technical message from a farmer perspective through video encourages innovation and trust, which increases the chances of a technology being adopted by local people.
- Reaches many people, even across regions and languages.
- Can be used with traditional media (radio, TV) and with new media (social networking) and can be combined into farmer field schools or other types of participatory research and extension approaches.

<sup>1</sup> Muilerman, S. and David, S. 2011. *Costs associated with farmer field schools and video viewing clubs on cocoa integrated crop and pest management: The experience of STCP*. Impact Brief No. 8. Sustainable Tree Crops Program. Accra, Ghana: International Institute of Tropical Agriculture.

### Box 1. Basic video production equipment and price range (US\$)

- Camcorder (US\$400–800), high definition (HD) camera (US\$200–2,000), 3CCD camera (under US\$1,000), or flip camera (US\$100–300)
- Tripod (US\$100–500)
- Microphone: Tie-clip omni-directional (US\$30–50), or shotgun or wireless (US\$50–200)
- Headphones (US\$50–200)
- Spare video batteries (optional) (US\$50–150)
- Flash drive/external hard drive (US\$50–200)
- Computer with editing software (US\$300–1,800)
- Editing software (US\$50–150)

### Weaknesses

- Not everyone can afford the equipment needed to produce quality videos.
- Video screening may need to be combined with other methods (e.g. field demonstration) to teach new skills and practices.
- Certain operations can only be filmed at certain times of the year (e.g. planting, weeding, harvesting) or may require various visits to the field to film them, increasing the cost of video production and the time needed to produce the video.

### Long-term sustainability

Sometimes it seems that making the video is the easy part. Distributing videos over a wide area is challenging. You can usually find a shop that will print thousands of copies for you. These may cost as little as US\$1 each, but getting them into the hands of farmers will require a distribution plan and partner organisations that work in different areas.

Lack of electricity and viewing equipment at the village level are widely perceived to be problems with videos. However, in recent years more villagers have mobile phones, which they charge on solar panels or at shops in the small towns. Videos can now be downloaded even onto cheap mobile phones. Most villages have at least one TV with a DVD player and a solar-powered battery.

### Best-fit considerations

**Target groups:** Video can reach a wide range of target groups including the poor, women, and young people. The approach is especially suitable for low literacy populations, a disproportionate number of whom tend to be women. Young

people are also attracted to video and other forms of new media.

**Innovations:** Video is a versatile tool, appropriate for sharing information on many agricultural innovations, but also for stimulating farmers to conduct their own experiments and adapt the technologies. Videos that focus on discovery learning (that tell viewers why something works) are easier to up-scale (take to wider areas). Video is suitable for showing events that happen over several years (e.g. the effects of soil erosion) or months (e.g. a cropping calendar).

**Institutional setting:** Video can be used for multiple objectives, and is an appropriate tool in most institutional settings. Video is appropriate as a training tool where farmers are organised, but can also be shown in loosely organised gatherings. Showing videos is easier where there is electricity, television, and internet, but technical change is rapidly making videos easier to watch off the grid.

### Governance

Videos can be integrated into pluralistic extension systems involving government, NGOs, farmer organisations, and the private sector. While many video projects are started by NGOs and international organisations, other service providers have integrated the videos into their programmes. Even people who do not make videos themselves can use videos in extension.

### Evidence of impact and potential scalability

In studies of farmer-learning videos in Benin and Uganda, rice-growing communities could remember the contents of rice videos 5 years after viewing them and had made technical and institutional innovations (e.g. contacting extensionists to request rice seed).<sup>2</sup> Women's groups in Benin that watched videos innovated more, and strengthened their groups to produce and sell parboiled rice.<sup>3</sup> Ghanaian cocoa farmers trained through video viewing clubs had significantly improved knowledge of technical topics compared to a control group.<sup>4</sup>

Video is highly scalable even across regions and cultures (Box 2). Digital Green has reached 7,448 villages and over 640,000 community members in Ethiopia, Ghana, India and Tanzania.<sup>5</sup> Quality videos hosted on the Access Agriculture website have been used by over a thousand organisations and reached at least 897,000 farmers directly and another 45 million on television. The videos have been used in over 80 countries.<sup>6</sup> At local level, farmers will often show videos on their own initiative.

2 Zossou, E., Van Mele, P., Vodouhe, S.D. and Wanvoeke, J. 2010. Women groups formed in response to public video screenings on rice processing in Benin. *International Journal of Agricultural Sustainability* 8(4): 270–277.

3 Bentley, J., Van Mele, P., Okry, F. and Zossou, E. 2014. Videos that speak for themselves: When non-extensionists show agricultural videos to large audiences. *Development in Practice* 24(7): 921–929.

4 David, S. and Asamoah, C. 2011. Video as a tool for agricultural extension in Africa: A case study from Ghana. *International Journal of Education and Development using Information and Communication Technology* 7(1): 26–41.

5 See <http://www.digitalgreen.org/resources>

## Box 2. Video case studies

Digital Green has produced over 3700 participatory videos in more than 20 languages. The videos are unscripted, but made with a story board. Each video is filmed in one language and designed to be used in one local area. Local people are engaged to show the videos to other local people, facilitate discussion, and to record data on the viewers.

Access Agriculture has produced over 60 farmer learning videos with farmers, in 67 languages. A script is written with each video, to ease translation. The videos are shown by partners and are also placed on <http://www.accessagriculture.org> where they can be downloaded for free by extensionists or anyone else.

There are few initiatives designed to use videos on mobile phones, but VideoKheti is a Microsoft project that collaborates with Digital Green to allow villagers to find and watch agricultural videos on a mobile phone. The users can speak or touch the screen to navigate the text-free system, which has 147 videos. It was developed to be used in Hindi. An early study of 20 farmers found that it was difficult to use by people with little education.<sup>7</sup>

## Training materials

### Manuals for video makers and users

Video Production: Agricultural Education and Communication Department, University of Florida/IFAS Extension. [http://edis.ifas.ufl.edu/topic\\_video\\_production](http://edis.ifas.ufl.edu/topic_video_production)

Technical advice for video-makers:  
<http://www.accessagriculture.org/node/361>

Woodard, J. 2012. *Integrating low-cost video into agricultural development projects: A toolkit for practitioners*. Publication by fhi360 of USAID. Available at: <http://www.fhi360.org/sites/default/files/media/documents/Introduction.pdf>

### Video editing software

Pinnacle studios has free software for editing videos on iPad or iPhone: <http://en.softonic.com/s/pinnacle-studio-16-ultimate-free-download-full-version>

Windows Movie Maker is available in English and other languages: <http://windows.microsoft.com/en-au/windows-live/movie-maker>

## Further reading

Chowdhury, A.H., Hambly Odame, H. and Hauser, M. 2010. With or without a script? Comparing two styles of participatory video on enhancing local seed innovation system in Bangladesh. *Journal of Agricultural Education and Extension* 16(4): 355–371.

Gandhi, R., Veeraraghavan, R., Toyama, K. and Ramprasad, V. 2009. Digital Green: participatory video & mediated instruction for agricultural extension. *Information Technologies and International Development* 5(1): 1–15.

Lie, R. and Mandler, A. 2009. *Video in development: Filming for rural change*. Wageningen, The Netherlands and Rome, Italy: CTA and FAO. Available at: [http://www.fao.org/uploads/media/Video%20in%20Development\\_1.pdf](http://www.fao.org/uploads/media/Video%20in%20Development_1.pdf)

Van Mele, P. 2006. Zooming-in, zooming-out: A novel method to scale up local innovations and sustainable technologies. *International Journal of Agricultural Sustainability*, 4(2): 131–142.

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 6, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by Agro-Insight, the University of Guelph, and the Food and Agriculture Organization of the United Nations (FAO), with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

The views expressed in this publication are those of the author(s) and do not necessarily reflect the views or policies of the Food and Agriculture Organization of the United Nations.

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

<sup>7</sup> Cuendet, S., Medhi, I., Bali, K. and Cutrell, E. 2013. *VideoKheti: Making video content accessible to low-literate and novice users*. Paris, France: CHI.

# Edutainment TV for disseminating information about agriculture

Evelyne Kiptot, Steven Franzel, Cara Nora, and Anne-Marie Steyn

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## Introduction

The rapid spread of television (TV) channels offers a unique opportunity to disseminate knowledge via private and public information systems to millions of farmers within a short period of time. When agricultural themes and messages are woven into entertaining shows that use popular actors, comedians, and cartoon characters, information reaches out to a much wider audience who might not necessarily be interested in agriculture. Youths are becoming more interested in agriculture

through watching reality TV shows that follow the lives of young food producers and stories of farmer ‘superheroes’, making these topics entertaining and at the same time educational, hence the term ‘edutainment’. Edutainment via TV is reaching a widespread audience in the comfort of their homes, creating a passion for farming, and delivering information on vital new technologies to farmers. Edutainment TV shows are aired in several countries (Table 1). All these examples except *Farmers Love Safety* are produced by private sector players.

## Philosophy and principles

Edutainment TV refers to entertaining TV programmes intended primarily for educational purposes. Edutainment TV in agriculture seeks to impact on people’s knowledge and attitudes to help them make informed choices about their agricultural practices; shift norms and attitudes; change farming behaviours; stimulate public discussion and debate about improved practices; link people to services to obtain help and support; impact on the social and political environment; influence and effect policy change; and stimulate social action on particular issues. TV provides a visual aid: by showing improved agricultural practices in familiar settings, the uptake of information is enhanced.

Table 1. Examples of edutainment TV programmes

Title	About the show	Country
<i>First Time Farmers</i> <sup>1</sup>	Chronicles youth who are trying their hand at the family business	United Kingdom
<i>Shamba Shape Up</i> <sup>2</sup>	Involves visits to small-scale farmers with experts or other farmers to advise them on how to improve agricultural productivity on their farms – presented by popular Kenyan actors	Kenya, Tanzania, Uganda, Rwanda
<i>Seeds of Gold</i> <sup>3</sup>	Disseminates information on new agricultural technology – production, marketing, and value-addition – to current and potential farmers within and outside the country	Kenya
<i>Farmed and Dangerous</i> <sup>4</sup>	Promotes the importance of food safety and sustainable farming – the Mexican restaurant chain Chipotle has created an original entertainment show that both presents a message and earns income from advertisements placed by other companies	United States
<i>Farmers Love Safety</i> <sup>5</sup>	Promotes sustainable growth in agricultural production and improved rice value chains to provide farmers with better knowledge on production inputs and access to markets	Thailand
<i>Hridoye Mati O Manush</i> <sup>6</sup>	Covers all aspects of agriculture, its problems, possibilities, and ways of improving farmers’ livelihoods	Bangladesh

1 Channel 4, UK: <http://www.channel4.com/programmes/first-time-farmers/episode-guide/series-2>

2 The Mediae Co. Ltd: <http://www.shambashapeup.com>

3 Nation Media Group: <http://www.nation.co.ke/business/seedsogold/Seeds-of-Gold-programme-to-premier-on-NTV/-/2301238/2757902/-/c5a27nz/-/index.html>

4 Chipotle: <http://adage.com/article/digitalnext/chipotle-takes-a-risk-producing-hulu-tv-series/291914>

5 BASF: [https://agriculture.basf.com/en/Crop-Protection/News-Events/Press-releases/"Farmers-Love-Safety"-TV-Show.html](https://agriculture.basf.com/en/Crop-Protection/News-Events/Press-releases/)

6 Channel I, Bangladesh: <http://www.thedailystar.net/news-detail-24222>

Key principles of successful edutainment TV are as follows.

- **Title of the show:** must be eye-catching. Audience choices are often based on programme guides that include just the title of the programme, the theme or title of the episode, and at most a very short description.
- **Content:** should be a good balance of education and entertainment. The show should be appealing and engage the target audience. It must have new and exciting ideas. It should also be accurate, precise, and culturally acceptable.
- **Topics:** the message should be integrated with the challenges of farming as well as other non-farm issues relevant to the audience. For example, *Shamba Shape Up* integrates the use of solar for lighting with information on improved agricultural practices.
- **Duration:** keep it short and simple (KISS) to sustain viewers' interest.
- **Delivery:** the message should be presented in a simple, entertaining way that appeals and connects with the audience. Use humour. Use popular characters to deliver the message – people love celebrities and are receptive to listening to them.
- **Audience:** know the target audience and their needs. The show must resonate with people's lives and situations. *First Time Farmers* in the United Kingdom targets young people, and incorporates hard work with things that youth enjoy.
- **Scheduling:** the show should be aired at a time when the target audience watches TV.
- **Durability:** an ongoing series of shows must be able to sustain viewers' interest across multiple episodes.
- **Promotion:** rigorous awareness-raising campaigns should be conducted in advance to capture the audience and increase viewership. The promotion of a TV programme should be well planned – first impressions are decisive when people decide if they will watch the show.
- **Sustainability:** a business model should be adopted where companies buy time to advertise their products, to ensure the show's sustainability.

### Box 1. SHAMBA SHAPE UP

In Kenya, the *Shamba Shape Up* reality TV show airs every weekend on a popular local channel. *Shamba* means 'farm' in Swahili, and the show is best thought of as 'Extreme makeover: farm edition'. The show guides small-scale farmers on how to improve agricultural productivity on their farms. Presented by popular Kenyan actors, it is engaging, entertaining, and yet informative. The *Shamba Shape Up* team, which visits a different farm in a different area of the country each week, includes the actors, a film crew, and a number of experts from partner organisations who specialise in the topics covered in the episode. The show has become very popular, attracting 11 million viewers around East Africa. During each episode, viewers are given a short code that they can text to the programme makers to ask questions and/or to request a free printed pamphlet on the week's topics.

- **Interactivity:** the show should be combined with other communication technologies to facilitate uptake of the practices it is promoting. For example, it can encourage viewers to send text messages requesting more information using their mobile phones. Incorporating a call centre is also helpful, so that farmers can call in to ask questions. These technologies can also serve as a feedback mechanism for determining viewers' perceptions both of the show and of the agricultural practices it is promoting.

## Implementation

The following key steps should be taken into account to ensure the success of an edutainment TV show. During implementation, it is important that the key principles of good edutainment are followed.

### 1. Research and planning

- Choose the topic, conduct research on it, identify the target audience, and decide on the scale of the project
- Develop a budget and schedule
- Define the format of the TV production
- Raise funds for development, production, implementation, and evaluation

### 2. Development

- Develop the message and storyline
- Scout for people and material for filming
- Develop educational packages

### 3. Production and postproduction

- Film the content
- Edit the episodes (sound, colour, graphics, etc.)

### 4. Validation/feedback on postproduction

### 5. Broadcasting

- Promote the show through various means, such as Facebook and TV advertisements
- Air the show

## Monitoring and evaluation

Monitoring is the continuous routine tracking of program activities. Evaluation involves an assessment of the extent to which a program has achieved its intended objectives and how it could be improved. There are four main reasons for undertaking an evaluation.

- To gauge the impact your shows have on your audience.
- To understand the strengths and weaknesses of the show, and the promoted agricultural practices, in order to improve next time.
- To enable your current and potential funders to see the value of your work.
- For accountability towards the audience and funders

Monitoring and evaluation can be undertaken using quantitative and qualitative methods. Quantitative methods include surveys; while qualitative methods may include focus group discussions and in-depth interviews.

## Capacities required

Creating a successful edutainment TV show requires a dynamic media team that is able to harness the required resources and capacities – directing, researching, production, scriptwriting, and editing. It is important that scriptwriters have an understanding of agriculture and familiarity with the target audience (e.g. smallholder farmers), including their resource constraints and needs. Other capacities required are in campaigning, publicity, fundraising/resource mobilisation, and partnership building.

## Costs

Costs will vary depending on the scale of the project and services provided, but generally include equipment and procurement of licences; staffing; research, development, filming, and broadcasting; promotion; maintenance of equipment; and monitoring and evaluation.

Costs of producing a show are relatively high in terms of absolute cost, but low in terms of cost per household reached. For example, engaging *Shamba Shape Up* to film five six-minute segments costs US\$50,000, with an audience of 3.5 million households – only US\$0.014 per household.

## Strengths and weaknesses

The major strengths and weaknesses of edutainment TV programmes for agricultural information are shown in Table 2.

## Best-fit considerations

### Target groups

The approach is appropriate for a wide range of people, including women and youth, and people in urban areas who are rarely in contact with extension services. For example, *Shamba Shape Up* reaches more women than men (66% female to 34% male). This is important as women are generally excluded from traditional training and workshops. Women are able to view the TV shows directly, which reduces problems associated with inaccurate transfer of knowledge. It allows them to make informed decisions

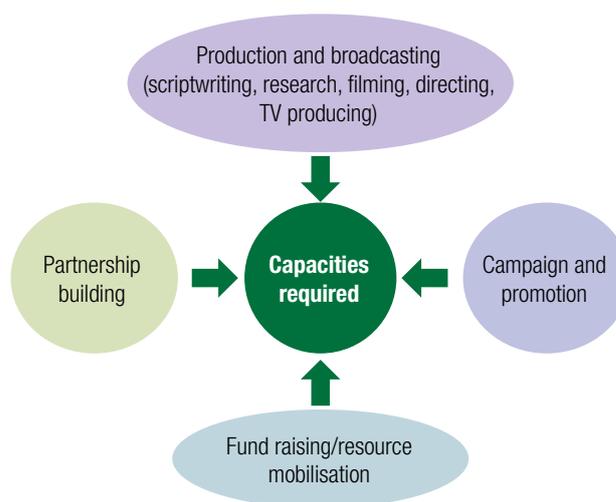


Figure 1. Capacities required to develop a successful edutainment TV show

to adopt practices based on the information they receive from the show. It is also particularly useful for attracting the youth to view agriculture as an enterprise worth venturing into.

It is not, however, appropriate for poor farmers who lack access to TV, or for those who may not understand the language in which the shows are broadcast. One solution is to record shows on DVD or flash drive and show them on projectors in rural areas, to reach viewers with no access to TV. They can also be translated into local languages if funding is available.

### Innovations

Edutainment TV is appropriate for a wide range of agricultural innovations. For example, *Shamba Shape Up* series 5<sup>7</sup> focused on innovations related to dairy practices, soil conservation, poultry, nutrition, financial literacy, planting and husbandry of sweet potatoes, tomatoes, sunflower, maize, rice, and other crops and enterprises. In one of the *Hridoye Mati O Manush* series, farmers in Bangladesh were introduced to new methods of crop diversification, composite farming, simpler ways of

Table 2. Strengths and weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Wider reach than many extension approaches</li> <li>• Helps improve viewers' access to information</li> <li>• Appeals to youth and urban dwellers</li> <li>• Entertaining as well as educational</li> <li>• Can have an immediate impact</li> <li>• Can be packaged as DVDs for later viewing</li> <li>• Can be posted on YouTube for wider distribution and use</li> <li>• Can be integrated with mobile phones and call centres for viewers to pose questions, receive responses, and provide timely feedback</li> <li>• Can be edited into short clips enabling closer targeting of farmers' different needs</li> </ul>	<ul style="list-style-type: none"> <li>• High cost per show</li> <li>• Penetration of TV still low in many developing countries</li> <li>• Not interactive</li> <li>• Language limitations – difficult to make programmes in many different languages</li> </ul>

7 Mediae. 2015. *Shamba Shape Up series 5. Kenya knowledge, attitude and practices survey report*. Nairobi: Mediae Company. Available at: <https://shambashapeup.com/impact/>

production, transportation, and marketing, in addition to avoiding having to deal with intermediaries.

Edutainment TV shows can also be integrated with mobile phones and call centres to make them more interactive. Introducing competitions within a show can make it more attractive. A good example is *Farmers Love Safety* in Thailand, which features two opposing teams of farmers who compete over which group can produce the highest yields and the best quality harvest. Shows can also be uploaded on YouTube and packaged as DVDs for later use.

### Context

Edutainment TV shows are not available in many countries. Where they are available, people need to have access to TV services or the internet (assuming that shows are also available online). Research has shown that people in rural settings who do not own a TV often watch in community halls, bars, and other social places, or in friends' and relatives' houses. A 2010 study in Tanzania found that 41% of the population watches TV weekly.<sup>8</sup> A high proportion of viewers are people from urban areas; however, about 38% of the urban population own farms in rural areas and/or may advise and provide inputs to rural relatives who farm.

### Governance

Edutainment TV showing agricultural innovations can be implemented by a wide range of actors including the private sector, government, NGOs, and other development practitioners with an interest in educating viewers about improved farming techniques. In edutainment TV, the company or organisation producing the show has overall ownership rights to the show. But to safeguard the show's credibility, it is important to involve relevant experts to ensure high-quality content. Thus strong and diversified partnerships are essential with research organisations, government departments, universities, and NGOs for capacity-building and technical guidance, and with institutions that can offer financial support. The entity managing the show has to ensure all partners' needs are met and everyone has an equal amount to gain from the partnership.

### Evidence of impacts, sustainability, and scalability

Edutainment TV shows have been demonstrated to have a positive impact in Kenya. An impact assessment by the University of Reading<sup>9</sup> found significant uptake of practices featured on *Shamba Shape Up* (Box 1), and increased incomes for farmers who watched the show. In 2014 it was estimated that the impact of *Shamba Shape Up* on the dairy sector in East Africa could be valued at US\$24 million through increased milk production. The show has also helped to reduce postharvest losses and increase financial literacy. The impact assessment

noted that for a new agricultural practice to be adopted, it needs to be viewed on TV between five and eight times.

Financial sustainability is a major issue in edutainment. Initial establishment costs do need to be externally funded, but at later stages a profit-oriented business model may be developed by having agencies and service providers buy airtime and advertise their products. *Farmed and Dangerous* earns revenue from advertisements during the show. An effective business model will be scalable, sustainable, and based on clients' needs – not necessarily true of services offered by donors free of cost. *Shamba Shape Up* currently earns about half its revenue from organisations funded by donor agencies promoting agricultural practices, and half from commercial companies that gain exposure by demonstrating their products and practices.

### Further reading

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Nazari, M.R. and Hassan, S.H.J. 2013. Role of broadcast media in the dissemination of agricultural knowledge. *Archive des Sciences* 65 (3): 45–55.

### Training materials

CCAFS. 2015. *Change for the better*. 2015 report. CGIAR Research Program on Climate Change, Agriculture and Food Security. Available at: <https://ccaafs.cgiar.org/research/annual-report/2015>

Japhet, G. 2013. *Edutainment: Using stories and media for social action and behaviour change*. Johannesburg, South Africa: Soul City Institute for Health and Development Communication. Available at: <http://www.soulcity.org.za/research/published-articles/edutainment-using-stories-and-media-for-social-action-and-behaviour-change/view>

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This content was originally published in September 2016 as GFRAS Global Good Practice Note 22, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the World Agroforestry Centre and *Shamba Shape Up* with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

8 Murthey, G. 2011. *Tanzanian media environment: current access, potential for growth and strategies for information dissemination*. Washington, DC and Nairobi: Intermedia, The AudienceScapes Project. Available at: <http://www.intermedia.org/research-findings/audiencescapes/>

9 University of Reading. 2014. *Assessing the impacts of Shamba Shape Up*. Africa Enterprise Challenge Fund, Mediae Ltd and University of Reading. Available at: [http://www.shambashapeup.com/static/uploads/READING\\_RESEARCH.pdf](http://www.shambashapeup.com/static/uploads/READING_RESEARCH.pdf)

# Social media for rural advisory services

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Screengrab of <https://www.facebook.com/groups/Livestock.TN/>

## Introduction

Social media refers to the web-based tools and media that allow users to personally and informally interact, create, share, retrieve, and exchange information and ideas in virtual communities and networks. Social media includes social networking sites, blogs and microblogs, online forums, discussion boards and groups, wikis, socially integrated text messaging services, videos and podcasts, and many more. Rural advisory services (RAS) have seen enormous changes in the 21<sup>st</sup> Century that require interaction among multiple stakeholders – public, private, and non-profit – and learning to take collective action. These services have been called upon to be less ‘top-down’ and more interactive, and social media can be a potentially powerful tool in this regard. With increasing reach among rural people, especially the youth, through increasing mobile phone subscriptions and decreasing data tariffs, social media can help RAS to reach farmers more efficiently. The high level of user engagement in social media also makes it one of the most participatory mediums of extension. This makes the sharing of data, information, and knowledge faster, easier, and more cost-effective, while at the same time enabling collaboration and demand-based RAS.

## Philosophy and principles

The basic philosophy of social media is the democratisation of information, communication, and knowledge management. The following principles for using social media for RAS should be considered:

- **Involve and engage:** The ultimate end goal of a social media strategy should be the engagement and involvement of clients and other stakeholders, in order to achieve sustained communication processes.

- **Organisational policy on social media:** Sharing personal and professional information online needs guidelines. The key consideration is how users can differentiate between personal and professional opinions when using social media. A social media policy for organisations, including an ethical standard for users, can create a balance between maintaining a professional reputation and encouraging the free flow of information.
- **Broad-based information:** RAS facilitate communication, learning, and action related to improved livelihoods of clients. Therefore, a social media strategy should cover a wide range of knowledge and information resources, while also addressing specific information needs.
- **Subject to change:** Social media works best if based on continuous, iterative processes that allow for necessary changes in the social media platforms used, as well as adjustment to the content and delivery needs of the clientele. For example, social media might start off on one platform, such as Facebook, and later include other platforms or lists of users.
- **Gate keeping:** One or more facilitators should be assigned to make sure that conversations and information flows remain relevant and contribute to the strategic goal associated with the use of social media. A content filtering technique to eliminate any irrelevant or repetitive information is important to ensure everyone’s right to communicate, whilst maintaining the free flow of information in the group without repeating past posts.
- **Facilitating the interaction:** Social media encourages extension organisations to act as facilitators, bringing all stakeholders to the same platform, but it can also relieve the organisations’ central coordination of information and encourage direct interaction among the communicators, namely, rural community members.

## Implementation

**Baseline survey:** Baseline surveys are used to understand the social media preferences of clientele. This information can help to determine the correct platform, expected frequency of use, and set targets such as maximum reach.

**Creating interest groups:** Depending on clients’ needs and also location specific problems, interest groups or lists can be created with a moderator from the organisation for the sake of gatekeeping information.

**Formulating social media policy:** At the organisational level, social media policy/guidelines will help achieve the full

potential of social media for RAS. The policy should be flexible to allow some personal approaches to communication. For example, one extension worker or producer may focus primarily on their area of work or interests. Guidelines also ensure that sensitive information sent or discussed over social media is appropriately managed. There should also be a risk management strategy within the social media policy.

**Sensitising and training of extension professionals and clientele:** Social media literacy training on its effective use by extension personnel and at the grassroots level, specifically among the rural youth and women, will enhance the use of social media in RAS.

**Timing is everything:** Both in social media and agriculture, timing is of the essence. Timely updates become much easier through social media in extension. Well planned and strategically timed posts can be more effective than frequent messages. Quality as well as quantity of posts should be considered.

**Using pictures and videos:** Pictures and multimedia content always attract more attention. Sharing information with relevant pictures and videos sends a clear and effective message. Don't forget to ask permission before taking and sharing photos or videos.

**Adding value and acting on feedback:** Remember, two-way communication is about asking not just telling. User engagement in discussions and comments should be highly encouraged.

## Capacities required

Social media based communication requires technical and organisational capacities, such as the knowledge and skills to use relevant tools, graphics, or metrics. It also requires

organisational buy-in. A once-off process won't be sufficient for a successful social media strategy. The organisation will need to ensure their clientele has social media know-how and provide basic technical support on how to use social media on their internet enabled devices. Training should be tailored to specific target groups – extension personnel, researchers, and academics will have different needs from farmers or other stakeholders at the grassroots.

A clear understanding of the extension organisation's domain of work and clients' lives and livelihoods, as well as their needs for accessing and sharing information, is important. Engagement with the clientele is also needed on a regular basis to hold their interest. On social media this can be done by using direct messages or 'liking' posts from clients.

## Governance

Since organisations maintain the pages, groups, and accounts on social media platforms, it is easy to retain oversight. However, policy guidelines need to be followed properly and reviewed regularly. Social media policy is usually specific to the communication goals of the organisation. Policy should be built on principles such as keeping content up-to-date, commenting and providing feedback in a timely manner, encouraging relevant and meaningful content, following and engaging audiences, providing accurate information, and avoiding arguments and comments on legal matters. An organisation should anticipate challenges in managing social media to maintain a professional reputation, whilst encouraging the free flow of information. There are technological, organisational, institutional, and capacity challenges that may restrict the impact of social media (see Box 1).

## Costs

Cost effectiveness is one of the major advantages of social media use for RAS. Hosting pages, groups, and accounts, and sharing

### Box 1. Global survey on social media in RAS

In 2015, GFRAS conducted a global survey on the use of social media in agricultural extension and RAS. The survey was conducted online across 60 countries and 226 respondents provided results. Facebook was found to be the most popular platform used by RAS actors. The main uses for social media were searching for news and events and sharing information. A major impeding factor for social media use was the lack of authenticity of information shared online. Social construction of information (development and publication of information socially by the users) was considered the most important feature of social media (95.1%). Ninety five percent of the respondents believed social media can play an important role in bridging the gap between stakeholders in agricultural innovation systems. Reaching clients (77.4%) was a major use of social media in RAS. Training in social media use was uncommon, and 71% of

the respondents said they need training. If and when there was training conducted by the respondents' organisation, it mainly focused on the specifics of different platforms, and on the uses of social media in agricultural extension or the creation of social media tools. But at an organisational level, social media is still not given much importance by higher authorities (45.6%), and social media policy restricts rather than encourages its use (41.9%). Also, weak or non-existent connectivity in rural areas (69.9%), high data costs (52%), illiteracy of the clients (43.4%), and low participation and lack of interest (16.2%) of clients are reported to be major problems. Overall, the survey found that social media is still a very useful tool. To quote one respondent, "Social media is not only a tool for reaching large audiences; it is also an opportunity to develop relationships."

multimedia content on social media is free of cost in most of cases. There may be nominal costs for paying external experts to develop the capacity of staff in using social media and/or to formulate organisational policy guidelines for social media.

Social media campaigns and subscription fees have been used to raise funding for a special project or group activity. They should not be overused.

### Strengths and weaknesses

Table 1 outlines the strengths and weaknesses of using social media in RAS.

### Best-fit considerations

**Target audience:** Social media are useful for extension professionals and educated farmers, especially young people, who have online access, and also other RAS actors (input and market personnel, researchers, administrators, policy-makers, etc.).

**Innovations:** Social media tools help facilitate the free flow of information, knowledge, and creativity, enabling innovations by different stakeholders of RAS. Social media is ideal to inform, share, create awareness, and mobilise extension professionals, farmers, and other RAS stakeholders in the shortest possible time.

**Ecological and institutional settings:** Social media works best for institutions and individuals with better ICT availability and access.

### Evidence of impact and potential scalability

The impact of social media is mostly determined by the user base and level of participation. Continuous engagement and discussions, and creation and sharing of content can help to increase the membership subscription and enable feedback from members, as well as provide evidence of social media impact. Facilitation of social media platforms is key for achieving audience growth and scalability. A social media communication strategy is scalable across geography (local, regional, national, global), topics of interest (e.g. business, career, agronomic practices, crops, etc.), and type of clients (women, young people, smallholders, etc.).

### Issues of sustainability

Most social media platforms are available free of cost. Sustainability depends upon the ability of the members to feed the content, add value to content, and support purposeful online engagement. Social media sustainability depends on the capacity of the stakeholders (individuals, groups, and organisations) to address the dynamic information needs of clients and create networking opportunities that lead to agricultural enterprises. It may be possible to create operating revenue through various 'information-on-demand' services.

### Training material

AgEd Open Course Wave. 2015. *FAO short course on Web 2.0 and social media for development*. <http://elearning.icrisat.ac.in/moodle23/course/index.php>

**Table 1. Strengths, weaknesses, opportunities, and challenges**

Strengths	Weaknesses	Opportunities	Challenges
<ul style="list-style-type: none"> <li>Highly cost effective</li> <li>Simultaneously reaches large numbers of people</li> <li>Location and client specific, problem-oriented</li> <li>User-generated content and discussion among the community of members</li> <li>Easily accessed from mobile phones</li> <li>Increases internet presence of extension organisations and their client reach</li> <li>Democratisation of information</li> <li>Brings all RAS stakeholders onto a single platform</li> <li>Can measure impact and success by tracking number of visitors, friends, followers, mentions, Facebook 'likes', conversation index, and number of shares</li> </ul>	<ul style="list-style-type: none"> <li>Limited ICT and online facilities in rural areas</li> <li>Only suitable for educated and online clientele</li> <li>Lack of awareness and readiness to accept social media by some farmers and extension professionals</li> <li>Internet privacy issues</li> <li>Relevancy of information</li> <li>Success of social media depends on commitment level of community of members in using social media for RAS</li> <li>Information overload</li> </ul>	<ul style="list-style-type: none"> <li>Few social media apps are available without internet</li> <li>Forming local/regional interest groups is possible</li> <li>Reaching one to many</li> <li>Greater engagement and dialogue</li> <li>Allows for integration of a wide range of stakeholders</li> <li>Can act as catalyst for resource mobilisation (technological, organisational, and financial)</li> </ul>	<ul style="list-style-type: none"> <li>Quality control and monitoring of posts</li> <li>Ensuring participation</li> <li>Internet and IT infrastructure issues</li> <li>Satisfying heterogeneous users</li> <li>Institutionalising social media</li> <li>Continuous engagement</li> <li>Skilled human resource to maintain social media</li> <li>Measuring the impact – lack of capacity for tools and analytics that help monitoring and assessing the value of information</li> <li>Creating awareness about social media's potential at the organisational level</li> <li>Allocating time to update content</li> <li>Encouraging stakeholders to access resources through social media links</li> </ul>

FAO and CTA. 2015. *Innovative collaboration for development*. Available at: <https://www.unitar.org/ksi/innovative-collaboration-development>

Oregon State University. 2015. *Social media tools*. Available at: <http://extension.oregonstate.edu/help/training/social-media>

Utah State University. 2015. *Social media tools*. Available at: <http://extension.usu.edu/socialmedia/htm/social-media-tools>

### Useful tools for monitoring and social media analytics

DATASIFT – a social media management tool. <http://datasift.com/>

Hootsuite – a social media management tool. <https://hootsuite.com/>

TouchGraph – visualisation of social media network data. <http://www.touchgraph.com/navigator>

TrueSocialMetrics – a tool for analysing different social media data. <https://www.truesocialmetrics.com/>

TWEETREACH – a tool for analysing Twitter data. <https://tweetreach.com/>

### Further reading

Andres, D. and Woodard, J. 2013. *Social media handbook for agricultural development practitioners*. Publication by FHI360 of USAID. Available at: <http://ictforag.org/toolkits/social/SocialMedia4AgHandbook.pdf>

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 15, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Web portals for agricultural extension and advisory services

Raj Saravanan, Bhattacharjee Suchiradipta, Shaik N. Meera, Chinnusamy Kathiresan, and Nallusamy Anandaraja

## Introduction

Agriculture is the largest employer in the world, providing livelihoods for the majority of the world's poorest people. As the backbone of many developing country economies, agricultural development becomes synonymous with global development. Research and development efforts to improve agriculture have been ongoing for nearly a century, but with new and ever-changing global challenges, agriculturists need to be equipped with the right information to tackle those challenges. Through advances in information and communication technologies (ICTs), most of the information needed is available on the internet. But the sheer volume and uncertainty about accuracy makes getting correct and credible information very difficult. Web portals aim to resolve this situation. They are specially designed single access points to information collected from diverse sources.

In the context of agricultural extension and advisory services (EAS), there are two predominant types of portals – those providing technical and market knowledge to end-users at the grassroots level, and those helping with capacity development of extension personnel. Knowledge portals (<http://www.knowledgebank.irri.org>, <http://www.rkmp.co.in>), e-Extension portals (<http://www.eXtension.org>, <http://www.agritech.tnau.ac.in>),

<http://www.e-agriculture.gov.gh>), video-based portals (<http://www.accessagriculture.org>, <http://www.digitalgreen.org>), market information portals (<http://www.agmarknet.nic.in>), information portals for rural people (<http://www.vikaspedia.in>), and institutional portals for extension and advisory services (<http://www.nafis.go.ke>, <http://www.kilimo.go.ke>) fall into the former category. Portals like Agricultural Extension in South Asia (AESAs) (<http://www.aesa-gfras.net/>) and Modernizing Extension and Advisory Services (MEAS) (<http://www.meas-extension.org/>) contain numerous resources and tools to enable knowledge sharing and networking among service stakeholders, and fall into the latter category.

## Philosophy and principles

Web portals are digital platforms that provide organised gateways to information or act as aggregators of knowledge from various stakeholders. Hosting portals to meet the needs of farmers, extensionists, and other EAS actors needs to be well-thought-out. Some principles of hosting web portals are:

- **Usability and utility:** The portal should be user-friendly to non-experts in information technology (IT). The information provided should be relevant and of high utility to potential users. Local language or multiple language display options also help.
- **Content organisation:** Enhance the user experience by presenting the content in a form that is easily understandable, navigable, and searchable, in addition to being visually appealing.
- **Flexibility:** The web portal needs to be flexible in design so that new features can be added when needed without major disturbance to the configuration.
- **Structure:** The structure of the content should be well-defined and in a definite pattern to make access and navigation easier. The site navigation should be easy to locate.
- **Site display:** The portal should preferably work and display consistently across all browsers and devices.
- **Visualisation:** Visualisation of the content repositories can reduce information overload and the time needed to retrieve information.
- **Customisation:** Allowing users to customise the portal to meet their specific needs can increase user satisfaction and efficiency of use. But, for novice users, the majority of information should be displayed in easy to access links.
- **Content Management System (CMS):** A CMS enables interactivity so that users can easily upload and update



content, which helps increase the repository of information.<sup>1</sup> Features like discussion forums, opinion polls, page rating, live search, surveys, feedback form, and so on encourage interactivity.

- **Broad-based information:** Varied information related to all aspects of rural life, with multimedia content support, helps make the information easy to understand.

## Implementation

The implementation requires collaboration between EAS and IT organisations. When implementing a web portal for extensionists and farmers, the following steps need to be followed:

- **Selection of content:** The content needs to be decided on jointly by selected users, subject experts, and web developers.
- **Designing the portal:** A well-arranged and user-friendly design is the most important part of a web portal. Since a web portal is much more extensive than a website, it needs to be much more thought out to specifically cater to the needs of novices.
- **Identification of roles:** Information needs to be constantly updated to ensure a quality and dynamic portal. To achieve this responsibilities need to be defined within and outside the organisation.
- **Periodic technology upgrades:** Frequently changing the user interface and portal design can make it user unfriendly, but upgrading the portal with new features to reflect evolving technology is very important to retain users.

Other features can be added to increase interactivity and sustain user interest: cookies to track user preferences (with their permission), chat or call options for help navigating the site, social media log in, bulletin boards, chat rooms, live search options, subject-specific content search facilities, discussion forums, opinion polls, and feedback and survey forms.

Web portals for agricultural extension and advisory services are developed and hosted by many types of organisations, including agricultural universities (see Box 1), research institutions, extension organisations, professional networks, private agri-business firms, and others.

## Governance and management

Web portal development and management is a collaborative task, involving many stakeholders. The developers need to continually upgrade, enhance, maintain, and support the site, and the EAS organisation needs to feed it with content and expert advice to keep the information up-to-date. The source of content also needs to be authenticated regularly to maintain quality. Clear allocation of roles when setting up web portals makes their governance and management easier.

## Capacities required for providers and participants

Many factors determine the success of a web portal, but the content management and delivery model are the most important components in the agricultural development context.<sup>2</sup> While IT-proficiency is a basic requirement for the providers, clear understanding of the information required by potential and current users is also very important to ensure the relevance of the information provided. Also, clear instructions and training need to be given regarding collating the obtained information in user-friendly language for higher readability.

Users of web portals will need access to internet-enabled devices and an internet connection, as well as basic knowledge of surfing the internet.

## Costs

The costs will vary depending on the specifications of the portal, hosting platform, technology used (open source or commercial), quality of the portal, support, and maintenance. The main costs are hiring a developer, creating a basic website (300–2,000), and CMS integration (US\$2,000–10,000). A simple portal will cost US\$10,000–25,000 and multi-site portals with multiple portlets around US\$25,000–60,000. There will also be extra charges for advanced features like diagnostics. A web portal with chat facilities and customer support will need a dedicated web master (US\$1,000–2,000 per month).

## Strengths, weaknesses, opportunities, and challenges

Web portals collate the huge amount of knowledge available on the web in a single place. But in spite of the advantages, many people are not yet using web portals due to lack of literacy or awareness. There are also many challenges to be overcome at the organisational and institutional level in order to increase the use of web portals in agriculture. The strengths, weaknesses, opportunities, and challenges of using web portals in extension and advisory services are given in Table 1.

### Box 1. Example of a portal

Tamil Nadu Agricultural University (TNAU) Agritech Portal (<http://www.agritech.tnau.ac.in>) has been catering to the needs of farmers, extensionists, and other stakeholders in agriculture and allied sectors since 2009. It offers a diverse range of information from crop-related or weather information, to daily market prices, schemes and programmes for farmers, daily news, events, publications supported by multimedia, expert systems, and much more. The portal can be accessed in Tamil and English and offers a keyword search facility.

<sup>1</sup> Glendenning, C.J. and Ficarelli, P.P. 2011. Content development and management processes of ICT initiatives in Indian agriculture. *Information Development* 27(4): 301–314.  
<sup>2</sup> Heeks, R. 2002. Information systems and developing countries: Failure, success and local improvisations. *The Information Society* 18: 101–112.

## Best-fit considerations

- **Nature of target groups:** Web portals can serve as a ready reference of information when needed for extensionists, researchers, academics, and policy-makers; however for farmers, literacy is important. Lack of device availability for access is a big drawback, especially for women.
- **Innovations:** Device compatibility is a very important feature that needs to be recognised during web portal development, mainly because of the mobile phone revolution in rural areas. Integration of features that enable interaction among users and real-time information display for market prices, weather, etc. can be very helpful for farmers.
- **Ecological and institutional settings:** Farmers not only need a device to access the portal, but also the wider infrastructure such as roads, electricity, etc. to actually put the information gained into use. At the organisational level, transparency in information sharing is an important aspect in quality control of information shared.

## Evidence of impact and potential scalability

Web portals have had far reaching impact on users financially and socially. In India, the e-Choupal initiative for market price dissemination has reduced the procurement transaction price from 8 percent to 2 percent and has involved the farmers in every step – from content generation to web portal design and layout.<sup>3</sup> Access Agriculture, through videos hosted on the web portal, has changed the life of farmers, especially of women, across Asia and Africa by making information accessible and empowering them.<sup>4</sup>

Most of the time, agricultural information is very location-specific and so the best scalability option can be to 'roll out, fix

it, and scale up',<sup>5</sup> collating the required information and editing out the unnecessary material depending on usability and farmers' responses.

Building portals/repositories cannot guarantee application at the farm level. There should be clear-cut knowledge uptake strategies and activities to encourage this. Such strategies include understanding knowledge pathways in communities, developing knowledge products for users, capacity-building, reinforcing knowledge by practical demonstrations in the field, feedback and sharing among stakeholders, and re-inventing knowledge at field level.

## Critical issues

EAS organisations need practical solutions for web portals to be effective at the grassroots level. For that some critical analysis of issues like content development (who, how, process, scale, and depth), capacity-building of extension personnel and organisations, building farmer communities for localisation of content, and credibility of information are important. Overcoming these requires multi-stakeholder involvement at many levels to make web portals effective in a rural farming scenario.

## Further reading

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**Table 1. Strengths, weaknesses, opportunities, and challenges**

Strengths	Weaknesses	Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Seamless integration of online information and knowledge from stakeholders</li> <li>• Location-specific information</li> <li>• Decentralised CMS encourages free flow of relevant, unbiased, and value-added content</li> <li>• Interactive portals facilitate discussion among peers</li> <li>• Integration of content in multiple forms (text, audio, video, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Illiteracy (educational and technological)</li> <li>• Needs technical expertise</li> <li>• Possibly outdated content</li> <li>• No mention of source reduces authenticity of information</li> <li>• Limited degree of customisation by individual users</li> <li>• Lack of customised agricultural content in regional languages</li> <li>• Limited ICT availability and access among women farmers</li> </ul>	<ul style="list-style-type: none"> <li>• More agri-organisations digitising their content</li> <li>• Favourable open access policies</li> <li>• Better access to information for tech-savvy farmers and extension organisations</li> <li>• Growing internet access through smart phones ensures wider audience</li> <li>• Promoting web portals through social media groups increases their visibility</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous updating and validation of content and portal features</li> <li>• Sustaining the interest of users</li> <li>• Increasing access for women and illiterates (educational and technological)</li> <li>• Lack of incentives or restrictions for organisations to share information</li> <li>• Continuous surveying of users to ensure that content and structure suits their needs</li> </ul>

3 Bowonder, B., Gupta, V. and Singh, A. Undated. *Developing a rural market e-hub: The case study of e-Choupal experience of ITC*. Available at: [http://www.planningcommission.gov.in/reports/sereport/ser/stdy\\_ict/4\\_e-choupal%20.pdf](http://www.planningcommission.gov.in/reports/sereport/ser/stdy_ict/4_e-choupal%20.pdf)

4 <http://www.accessagriculture.org/node/492>

5 Kaur, S., Jha, S.K. and Mandal, R. 2014. Information, efficiency, and sustainability in Indian agricultural markets: E-Choupal, ITC's private initiative. Available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2526061](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2526061)

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This content was originally published in August 2015 as GFRAS Global Good Practice Note 16, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.



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# Section IV

## **Cross-cutting issues**



# Integrating gender into rural advisory services

Kathleen Earl Colverson

## Introduction

Rural women's roles and contributions to agriculture remain undervalued and neglected by the sector's policy-making and implementation processes. Women typically are involved in many aspects of the agricultural value chain, often contributing anywhere from 25 to 75% of the productive labour. However, they generally have less access to rural advisory services (RAS) than men. They also have less access to agricultural inputs, such as fertilisers, technologies, and veterinary services, which reduces their overall productivity. This is particularly a problem in countries in Africa, where women's agricultural involvement varies from about 30% in the Gambia to 60–80% in Cameroon.<sup>1</sup> Despite the evidence accumulated over several decades on women's multifaceted roles in farm-based livelihoods, and the need to support them, men are frequently still considered as the 'lead' farmer in a household, and RAS focus on their market-oriented interests. Women are often still seen as farmers who are primarily interested in feeding their household, rather than as active participants in the commercial value chain. Women play a crucial role in the distribution of both food and non-food household resources that determine the food security of the household. In a variety of contexts around the world, increasing the resources that women control has been shown to improve the nutritional, health, and educational outcomes of their children.<sup>2</sup> Nonetheless, in many communities, women continue to face gender-based constraints that limit their ability to access agricultural information and opportunities, thereby limiting the family's potential to be food secure. Increasing women's access to extension services and agricultural inputs is critical to ensuring family and community food security.

## Philosophy and principles

Integrating attention to gender issues into RAS is based on the knowledge that "[C]losing the gender gap in agriculture could increase yields on farms by 20–30%. This could raise total agricultural output in developing countries by 2.5–4%, reducing the number of hungry people in the world by 12–17%.<sup>3</sup> Integrating gender into RAS can have benefits at multiple levels. At the household level, increasing women's access to inputs will improve their agricultural productivity. At the organisational level, engaging more women in cooperatives

and farmer associations can increase organisational effectiveness and has the potential to better address issues of concern to women farmers. Integrating gender issues at the policy level has the potential to increase the economic involvement of half the population and contribute to improving overall household food security.

Providers of RAS are challenged to cover multiple topics in their work (e.g., developing farmer cooperatives, addressing climate smart agriculture, and integrating gender and nutrition into agricultural programming). These issues must be addressed in some capacity, but it is important to recognise that all work with farmers should be based on the principles of *participatory facilitation*, which include the following:

- **Learning from the people:** Recognise the value of local knowledge and people's ability to solve their own problems.
- **Discussion and sharing of experiences:** 'Outsiders' (RAS) and 'insiders' (community members) share their knowledge and experiences and analyse problems from different perspectives.
- **Involvement of all within the community:** Facilitate a learner-centred process that involves all community members, including different ages, religions, and socio-economic statuses.
- **Outsiders are facilitators:** Create a 'learning environment' together. Facilitators should not lecture or talk down to the community even if they are experts in their subject matter.
- **Practical orientation:** Problems are investigated together with the community to achieve practical solutions.
- **Triangulation:** Information is studied from various sources using different methods; findings are repeatedly checked to validate results.

## Integrating gender into RAS – key considerations

When integrating attention to gender issues with a group of stakeholders (RAS clients and beneficiaries) it is important to consider the 'six W's':

- **Who is present or who is not present?** For example – when entering a meeting for the first time – are there both men and women present? Are they of different ages? Different

1 Anriquez, G., Croppenstedt, A., Doss, C., Gerosa, S., Lowder, S., Matuschke, I., Raney, R. and Skoet, J., 2010. *The role of women in agriculture*. ESA working paper No 10-03. Rome: Food and Agriculture Organization of the United Nations (FAO).

2 Quisumbing, A. 2009. *Do men and women accumulate assets in different ways? Evidence from rural Bangladesh*. Background paper prepared for the FAO State of Food and Agriculture 2010. Rome: FAO.

3 FAO. 2011. *The state of food and agriculture: Women in agriculture, closing the gender gap for development*. Rome: FAO.

sociocultural backgrounds? You can't have a successful agricultural innovation if part of the target population is missing. When studying the agricultural system, this type of question helps identify all potential stakeholders, including men and women, boys and girls, local authorities, government or non-government organisations (NGOs), etc. An example of this would be conducting a network analysis of all participants who might be affected or involved with an agricultural project and using that information to determine who to invite to a meeting so that all stakeholders are represented.

- **Who does what?** Men and women, boys and girls have different 'gender roles' based on multiple factors including culture, age, religion, caste, etc. It is important to identify who is doing what in agricultural systems. Women frequently have greater time constraints given their multiple roles, and this can affect the types of technologies they select, or the times they are available for meetings. In some instances, men have access to and control over agricultural resources that women do not have, which impacts who has the ability to use, or even have access to, a technology.
- **What are they doing?** Are men involved primarily in the agricultural production while women do all the processing? Are the men or women primarily responsible for childcare? Determining what they are doing will help in designing appropriate technologies or interventions tailored to the needs and wants of men and women. If the technology or innovation is appropriate to their needs, it will improve the chances it will be adopted and scaled up in the future. The Activity Profile<sup>4</sup> is a tool designed to help solicit responses to this question.
- **When are they doing it?** Men and women are responsible for different activities that occur at different times of the day or year. If you are planning a workshop in the morning, women might not be able to attend if they have household responsibilities that conflict with the meeting time. This is also important to consider when women and men may be engaged in an agricultural activity such as planting or harvesting and they might be unable to participate in the research. Simple tools such as the 24-hour day activity clock or seasonal calendar are available to assist with this question.
- **Where are they doing it?** (e.g., farm, field, community or house). For example, in many communities men are more often responsible for marketing agricultural products off the farm, and women more likely to market smaller agricultural products from the home to accommodate watching children or other domestic responsibilities. Their primary location will affect their ability to participate in research or meetings. Consider this when you are organising meetings with stakeholders.

- **Why are they doing it or not doing it?** When collecting the above information it is important to ask this question to understand some of the underlying reasons that men and women can or cannot participate in extension activities. To accommodate all stakeholders in a participatory manner, and have programmes that achieve sustainable impact, you need to understand the gender-based constraints and opportunities faced by male and female farmers.

## Capacities needed to integrate gender into RAS

Few developing countries have adequate numbers of extension agents; and men decidedly outnumber women agents. Since in some communities many women farmers are unable to attend meetings, or do not feel comfortable speaking with extension agents who are men, it is critical both to help men learn to reach women farmers in culturally acceptable ways, as well as to encourage hiring and retention of women extensionists.<sup>5</sup> In addition to training more women to be extension agents, there are a number of other suggestions for increasing the number of women participating in RAS activities:

- **Meetings:** Women have multiple roles and may not be able to attend when meetings are normally scheduled, or be able to travel alone. Childcare provision should also be considered to encourage attendance. These considerations may increase the cost of extension programs.
- **Single sex or mixed sex groups:** In many countries, women are frequently more comfortable speaking in the private sphere (at home) rather than the public sphere (in meetings). It may be necessary to build their confidence in single sex groups first before engaging them in mixed sex groups to ensure their participation later. This may require different kinds of training than extension providers normally offer.
- **Extension materials and visits:** Studies show that access to extension services is consistently lower among women than men: 19% for women versus 81% for men in Malawi, 1.13 versus 2.03 contacts in Uganda, 20% versus 27% in Ethiopia; and 8–19% of female-headed households versus 29% of male-headed households in Karnataka, India.<sup>6</sup> In many instances, fewer opportunities to go to school mean women are less literate and numerate than men. Using more pictures and interactive activities to relay extension information and engaging local women to train their neighbours are methods to address these shortcomings.

## Evidence of impact and next steps

Although much attention has been given to the role of education in empowering women, agricultural programmes can also play an important role. In Bangladesh, fish

4 <http://www.fsnnetwork.org/sites/default/files/ActivityProfile.pdf>

5 Ragasa, C., Berhane, G., Tadesse, F. and Seyoum, A. 2013. *Gender differences in access to extension services and agricultural productivity*. ESSP II Working Paper I. Washington, DC: International Food Policy Research Institute (IFPRI). Available at: <http://www.ifpri.org/publication/gender-differences-access-extension-services-and-agricultural-productivity>

6 IFPRI. 2013. *Gender differences in access to extension services and agricultural productivity*. Available at: <http://www.ifpri.org/publication/gender-differences-access-extension-services-and-agricultural-productivity>



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pond programmes that were 'gender blind' ended up reaching wealthier men, whereas fish pond and vegetable garden programmes that targeted poor women ended up empowering these women.<sup>7</sup> In the long term, the programmes that were targeted to women improved the nutritional status of women and children, as well as the equality of distribution of assets between men and women, more than untargeted programmes.<sup>8</sup> In Uttar Pradesh, India, Paris and colleagues<sup>9</sup> demonstrated the advantages of empowering women by giving them increased decision-making authority in participatory selection of rice varieties. This strategy improved the development of varieties best suited to the environment and increased females' confidence in their decisions and opinions. More work needs to be done on measuring the impact that increased attention to gender will provide to RAS.

To tackle the underlying norms and power structures that create and reproduce gender inequalities, an extension and advisory 'facilitation system' (as opposed to a service) is required. A facilitation system emphasises not only the creation of knowledge products for dissemination to end-users but also creating knowledge with those users through the process itself.<sup>10</sup> To create such a system an effective conceptual framework is needed to understand and map the domains in which power is exercised, negotiated, and expressed. Numerous frameworks are in the process of being developed and tested, including gender transformative approaches within the CGIAR.<sup>11</sup> Various NGOs are also experimenting with frameworks that challenge gender norms and power structures, including Helen Keller International's programme on 'Nurturing Connections'.<sup>12</sup> Such work has the potential for having a significant impact on food security in developing countries.

7 Hallman, K., Lewis, D. and Begum, S. 2007. Assessing the impact of vegetable and fishpond technologies on poverty in rural Bangladesh. In: Adato, M. and Meinzen-Dick, R. (eds) *Agricultural research, livelihoods, and poverty: studies of economic and social impacts in six countries*. Washington, DC: IFPRI.

8 Kumar, N. and Quisumbing, A. 2010. *Access, adoption, and diffusion: understanding the long-term impacts of improved vegetable and fish technologies in Bangladesh*. IFPRI Discussion Paper 995. Washington, DC: IFPRI.

9 Paris T.R., Cueno, A.D. and Singh, V.N. 2008. Assessing the impact of participatory research in rice breeding on women farmers: a case study in Eastern Uttar Pradesh, India. *Experimental Agriculture*, 44: 97–112.

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11 World Fish. 2013. <http://www.aas.cgiar.org/content/gender-transformative-approach-crucial-successful-agricultural-development>

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Reaching Rural Women website:  
<http://www.reachingruralwomen.org>

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 4, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by INGENAES with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

The publication of this content was made possible in part by the generous support of the American people through USAID. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Integrating nutrition into rural advisory services and extension

Jessica Fanzo

## Introduction

There is a heightened awareness globally and within development institutions and governments of the need to better understand the links between agriculture and nutrition, and to decipher the ways in which the agriculture sector can contribute to improved nutrition. The 'what' and the 'how' of effectively delivering 'nutrition-sensitive agriculture'<sup>1</sup> services to rural households remain even less understood.

Extension workers (through public, private, and non-government organisation (NGO) channels) are often thought of as a promising platform or vehicle for the delivery of nutrition knowledge and practices to improve the nutritional health of rural communities because they reach and interact closely with farmers in different settings. They act as significant service providers of crop, livestock, and forestry aspects of food security, consumption, and production.

Nutrition concepts were first introduced into the training of extension personnel for rural development projects in the 1960s. During those early stages, the general consensus was that to have an impact on nutrition, the agriculture sector would need to expand beyond its sole focus on food production, and incorporate food consumption as well. For this to succeed, a key step was to improve extension agents' understanding of nutrition-related concepts, as the prevailing low levels of training did not equip them with the tools necessary to recognise the causes and consequences of malnutrition.

This new approach served as a global resource and was later adapted to the national contexts of numerous countries throughout Latin America and Africa. After the 1980s, globalisation altered agricultural policies significantly and resulted in market-oriented agricultural sectors that preferred food producers selling their output in the marketplace, thereby placing less emphasis on improving home consumption. Additionally, by the late 1990s, extension advisory services (EAS) across the developing world were deprived of funding as a result of changes in donor and lending policies, as well as due to the costs of the model. Both of these factors may have influenced the limited success of these early efforts to integrate nutrition and EAS.



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## Philosophy

There are numerous good arguments for why it should be effective to integrate nutrition into EAS including:

- **Established infrastructure.** In some countries, the EAS delivery system is already in place and it is just a matter of 'topping-up' their portfolio with simple nutrition activities and messages.
- **Reach.** Existing networks of extension agents already reach many people, and thus there is no need to tap into or seek new clientele. Extension agents have direct and sometimes extensive links to farming communities in rural and remote areas. These links are founded upon well-established structures and systems that cover most farming households.
- **Community trust.** Extension agents maintain regular contact and have established relationships with the people and the communities in which they work. It is much easier to introduce nutrition issues into communities with preexisting relationships built on trust.
- **Cultural awareness.** Extension agents are often aware of the local social norms, cultures, and belief systems that accompany and contextualise food. Agents frequently hail from the region where they work and therefore have intimate knowledge and understanding of the local context.
- **Empathy and understanding.** Because of their familiarity with the conditions and context under which the farmers work and associated limitations and opportunities, extension

<sup>1</sup> Nutrition-specific interventions address the immediate causes of undernutrition, like inadequate dietary intake and some of the underlying causes like feeding practices and access to food. Nutrition-sensitive interventions can address some of the underlying and basic causes of malnutrition by incorporating nutrition goals and actions from a wide range of sectors. They can also serve as delivery platforms for nutrition-specific interventions.

agents are more able to demonstrate empathy with the farmers. This is particularly true with regard to questions of food production and access. Equipped with knowledge of the local food production system, access to markets, and the nutrition status of households, extension agents have a clearer understanding of how to mitigate the constraints faced by farmers.

- **More knowledge.** We now know more on what to do and the eight principles<sup>2</sup> for integrating nutrition into agriculture and rural development serve as a guide for ensuring EAS have a strong footing in the integration of nutrition into their own services. Beyond just producing or having access to nutritious foods, we also know there are three main pathways that potentially improve nutrition: agricultural production, agriculture-derived income, and women's empowerment.

## Strategies

**Food-based approaches** would provide the best use of the skill sets of extension agents. These approaches can focus on:

- Nutrition-rich crops and their cultivation at the farm level.
- Linking farmers to markets and value chains to sell and buy nutritious foods at the farm gate level.
- Better use of foods grown and purchased at the household level through preservation, cooking, storing, and processing.
- Nutrition messaging and education geared towards behaviour change at the individual level. One source of this could be the essential nutrition actions,<sup>3</sup> which provide core messages that can be adapted.
- Improving food safety at the farm gate level by reducing aflatoxin during post-harvest storage and minimising environmental enteropathy<sup>4</sup> by pairing work with other interventions such as Water, Sanitation, and Hygiene (WASH).

**Non-food based approaches** can also impact nutrition.

Approaches such as:

- Providing women with the tools and technology to improve their own livelihoods and reduce their work and time burden, thus addressing women's empowerment.
- Generating income through raising livestock. Improved husbandry practices very likely will reduce incidence of environmental enteropathy.
- Adopting good agricultural practice (including safe use of chemicals) can have an impact on nutrition and health without even explicitly mentioning nutrition.

There are several delivery channels that EAS could use to deliver better nutrition. These include:

- On-farm demonstrations
- Farmer field schools and associations
- Public health and school platforms
- Water and sanitation programmes.

Adoption of more nutrition-sensitive agriculture takes more than just providing tools, technologies, and messages. If we want to see behaviour change, it is important for EAS to understand farmers' decision-making processes and how these impact livelihoods, incomes, and nutrition outcomes. This would include increasing awareness and interest, decision and uptake, evaluation, adaptation, and finally, adoption.

## Capacities required

The types of service providers working in nutrition extend beyond traditional frontline agricultural extension agents. As EAS have become more pluralistic, the actors providing services have become more diversified. There is also a tension with other rural workers, such as community health workers. Often, nutrition is thought to rest in their responsibilities. However, often they too are over worked, undercompensated, and have many tasks in the primary health care package.

The capacities that extension agents need to effectively integrate nutrition into EAS include:

- **Technical knowledge of nutrition:** Crop production for improving nutrition, in addition to training on diets, food preparation, preservation, and hygiene. Training of extension agents should include emphasis on creating awareness of the potential causes of malnutrition that apply to them as fieldworkers (since extension agents often perceive information about nutrition to be less important than other technical information) as well as messages that are applicable to farmers.
- **Communication, facilitation, and management skills:** It is necessary to introduce soft skills to agents, such as facilitation, negotiation, communication, and gender sensitivity. Farmers will need to be convinced to invest in nutrition for their own families and for the market. Creating demand amongst farmers will take time.
- **Minimising harm:** Extension service providers need to be sensitised to the fact that the promotion of certain practices, technologies, and income generation strategies can have adverse effects on diversity of production, home consumption vs. selling, and increased labour, time, and energy demands (especially for women), making nutrition improvements more difficult. Extension agents need to not only be sensitive to unintended harmful consequences but should facilitate a discussion on these potential trade-offs

2 See: [http://www.fao.org/fileadmin/user\\_upload/wa\\_workshop/docs/Synthesis\\_of\\_Ag-Nutr\\_Guidance\\_FAO\\_IssuePaper\\_Draft.pdf](http://www.fao.org/fileadmin/user_upload/wa_workshop/docs/Synthesis_of_Ag-Nutr_Guidance_FAO_IssuePaper_Draft.pdf)

3 While most nutrition interventions are delivered through the health sector, non-health interventions can also be critical. Actions should target the different causes to reach sustainable change, which requires a multisectoral approach. The essential nutrition actions (ENA) are a package of interventions that could reduce infant and child mortality, improve physical and mental growth and development, and improve productivity. [http://www.who.int/nutrition/publications/infantfeeding/essential\\_nutrition\\_actions/en/](http://www.who.int/nutrition/publications/infantfeeding/essential_nutrition_actions/en/)

4 Environmental enteropathy, also known as tropical enteropathy, is a condition (subclinical disorder) believed to be due to frequent intestinal infections. There are often minimal acute symptoms. There may be chronic problems with absorbing nutrients, which may result in malnutrition and growth stunting in children.

among the clients they work with. This would also include understanding how power dynamics in households and communities can influence outcomes.

Training also encompasses support systems for extension agents including mentorship, feedback, and career advancement. If a country does not have a support system for EAS in place, the probability of younger generations entering the education system, or doing vocational training with a focus on EAS, remains low. Training should include pre-service and in-service training on nutrition sensitive agriculture and be ongoing, reinforced, and mentored, in order for the addition of nutrition as a topic to be sustainable. This requires the public sector to take ownership and responsibility, and requires building the capacity of trainers and mentors in the field of nutrition. Training on nutrition-related agronomy can be done in the field by using field plots, greenhouses, and local biodiversity and ecosystems.

### Costs

Determining the costs of integrating nutrition into EAS is hampered by a lack of conclusive information about the efficiency and cost-effectiveness of integrated agriculture–nutrition interventions. There is some variation in viewpoints regarding the bundle of additional resources required. There is general recognition that integrating nutrition into EAS would incur additional costs, and there is some convergence on what the main drivers of the cost increases would be. These include nutrition training for extension agents, additional skills training for extension agents, cost of demonstrations and logistics, and use of technology.

Interest in integrating nutrition into EAS stems, at least partially, from the perception that it could be an efficient, effective use of existing resources, as extension agents are already embedded within the communities. However, it is important to keep in mind that incorporating nutrition into EAS activities will require additional resources, and that these systems are generally under-funded.

### Best-fit considerations

- Biofortification (of tested and approved crops) serves as an accessible entry point and opportunity for the integration of nutrition into EAS. With biofortification, extension agents are dealing with staple crops that provide nutritional value. Farmers are demanding more technology and improved cultivation training, both of which can be introduced by extension agents through biofortification.
- The use of information and communication technologies (ICTs) to backstop and support providers of EAS is gaining in popularity, particularly among NGOs experimenting with innovative ways to deliver messages. Mobile platforms, using SMS, apps, and voice messages, have been in use for some years. Digital Green is an example of an organisation that is starting to explore the use of ICTs to deliver nutrition

messages through extension agents. Radio can play a vital role in strengthening and complementing EAS nutrition messages.

- The Farmer Field School model and farmer associations can be considered an opportunity for EAS and nutrition and allow for effective delivery of nutrition-sensitive agriculture without the hindrance of some of the transport and training challenges faced by extension agents.

## Strengths and weaknesses

### Strengths

- Many extension agents have substantial reach into the communities in which they operate, and trust and rapport with community members. Harnessing this social capital is considered to be effective in improving nutrition.
- Improving yield and incomes are major goals for farmers. Integrating communication about nutrition and dietary-related behaviour change into the portfolio of activities of extension agents may create the conditions for improved nutrition to be adopted and demanded within farmer families.
- Extension agents focus on local food production systems. Through knowledge and adoption of new practices that integrate nutrition within local cropping, livestock, and food safety technologies and innovations, extension agents can better address the causal factors impacting the communities in which they work.
- Use of other delivery platforms, such as WASH, could link agriculture with the health and water sectors in meaningful ways to impact nutrition.

### Weaknesses

- The agriculture and nutrition sectors speak different ‘languages’. Coming from different disciplines, agriculturalists and nutritionists adopt different language, priorities, and terms, which constrains integration. This is often apparent among different rural workers.
- There is limited understanding of nutrition within EAS. There is an underlying ignorance regarding the basics of nutrition.
- Those working in nutrition contend there needs to be a discussion across sectors to clarify the role of each sector in addressing nutrition, and to decide how to mobilise resources and create a budget for nutrition interventions for EAS specifically.
- There is a lack of joint planning and dialogue at all levels. Coordination of planning and dialogue among the relevant agriculture, nutrition, and health actors does not happen. It is important to identify and leverage existing mechanisms and avenues for collaboration.

### Policy-making and enabling environment

Securing and maintaining high-level political support for both nutrition and EAS is key to ensuring the inter-ministerial coordination and resource allocation necessary for EAS to play a meaningful role in contributing to nutritional outcomes.

National multisectoral nutrition policies and strategies could provide a starting point for the integration of EAS delivery systems and nutrition activities. However, there needs to be an alignment with agricultural policies and priorities as well. Multisectoral coordination, particularly between the agriculture and health sectors, lies at the heart of integrating nutrition into EAS. While there are successful examples of coordination at the grassroots and district levels, stakeholders noted the need for higher-level support and engagement to replicate and scale successes.

### Evidence of impact and potential scalability

With the increased attention on, and investment in, nutrition-sensitive agriculture, EAS should be considered as an important potential contributor to delivering effective nutrition to rural farming communities. EAS could be a promising vehicle for delivering nutrition interventions through agriculture. The extent to which it is effective to rely on EAS to deliver nutrition interventions is uncertain. Much more understanding is needed of what approaches have the most significant impact on nutrition outcomes. Without that understanding, and research to assess impact, it is difficult to understand the effectiveness of integration of nutrition into extension.

Beyond gaining evidence of what approaches are most appropriate, there also needs to be significant investment and ramping up of EAS in general. If EAS are unable to provide the most basic agriculture services, it will be much more difficult to layer nutrition interventions, messages, and activities within their portfolio. EAS systems need support – financial, training, human resources, and infrastructure – to ensure that the services that are provided are robust.

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This content was originally published in July 2015 as GFRAS Global Good Practice Note 9, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by Jessica Fanzo with financial support provided by:

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, or CGIAR.

# Promoting nutrition-sensitive extension advisory services

*Stefan Kachelriess-Matthess, Annemarie Matthess, Anna Stancher, Ben Asare, and Emmanuel Ohene Afoakwa*

## Introduction

Extension advisory services (EAS) support smallholders to improve the productivity and efficiency of their farms and to take decisions on the outlook of their business. Extension advisory services include not only government extension services, but also services organised and funded by private companies along their supply chains – for example, a food processor or a commodity aggregator may establish an outgrower scheme and employ its own extension agents.

Both public and private EAS assist smallholders to improve production of one or a few lead crops, which are either exported (e.g. cacao, coffee, spices, cotton) or consumed as staples in local diets (e.g. rice, wheat, sorghum, potatoes). These crops generate comparatively high profit margins and enjoy significant market demand. By supporting their production and linking smallholders to markets, EAS contribute to increasing the incomes of rural populations.

However, the smallholders and households addressed by EAS are not only cash poor. They are often food insecure and suffer chronic or acute forms of malnutrition. This impacts on the physical and cognitive growth of children, and reduces productivity and the ability of household members to carry out agricultural work.

Lacking or highly variable income is one cause of food insecurity and malnutrition. But higher incomes do not automatically translate into improved nutrition. Poor eating habits, lack of knowledge about good nutrition practices, and limited access to diverse food items are other important determinants. Even when incomes are rising, households might prioritise expenditures that are not relevant to improving nutrition (e.g. communication, mobility).

This is why EAS need to identify and address the nutritional needs of rural households and to mainstream nutrition-sensitive messages in their service provision. This note reviews selected instruments that EAS can use for this purpose.

## Philosophy and principles

To develop nutrition-sensitive extension messages and disseminate them effectively, EAS should take account of the following principles.

- **Context:** nutrition-sensitive messages should build on analyses of dietary patterns and deficits of rural households. The household dietary diversity score of FAO<sup>1</sup> and national food-based dietary guidelines, if available, are helpful to identify nutrition gaps.
- **Adaptation to literacy levels:** where smallholders' literacy levels are low, visual tools, interactive methods, and simple language should be used to enhance the understanding of extension messages.
- **Balanced/equitable participation:** women play a major role in channelling household resources to food, health services, and education. However, women are subject to the influence and decision-making authority of other family members such as male partners and the elderly. Nutrition-sensitive extension should engage both men and women, as well as household members across generations (youth and elderly), fostering more harmonious intra-household communication and decision making, and more equitable power relations.
- **Business orientation:** smallholders are entrepreneurs and invest in production based on profit outlooks. Cost–benefit analysis should be used to enable smallholders to make well grounded decisions on their investments in production and consumption while taking the nutritional implications into account.
- **Scale:** the content of nutrition-related extension messages should be relevant for a large number of households. The methods of delivery need to be easy and low-cost, otherwise resource constraints will limit the outreach. Keep it simple, and focus on do-able actions.
- **Coordination:** to enhance impact, coordination with government or donor programmes that address nutrition, such as health systems, maternal care, and water supply, will be necessary.

## Implementation

Extension advisory services can support smallholders to improve their nutrition through a set of three interventions: nutrition education, diversification of production, and off-farm income generation for women<sup>2</sup>.

### Nutrition education

Extension advisory services can integrate nutrition education in their service using key messages that promote behaviour change. Such messages should:

<sup>1</sup> The household dietary diversity score and individual dietary diversity score provide indications of a household's or individual's consumption of a range of food groups, and can be used to understand access to food and the nutritional quality of diets.

- be adapted to the characteristics of agroecologies and established dietary patterns
- focus on diversification of diets (not only staples, but also food containing proteins and vitamins) and on hygienic practices of food preparation and consumption
- promote the consumption of food crops and animal products that are available at farm level to ensure they are used not only as sources of cash but also as food sources.

### Diversification of production

Households that specialise in the production of only one or a few cash crops suffer significant losses in the event of crop failure or falling market prices. They are also reliant on local markets to purchase food items to feed the family. If such markets are not well developed, access to diversified and nutritious food is a challenge.

Extension advisory services can promote diversification of production to increase the range of food available at household level through the cultivation of nutrient-rich food crops (e.g. leafy vegetables, biofortified crops) and through animal-rearing practices (e.g. poultry, snails, small livestock).

### What principles drive diversification?

- Promote the production of food that meets the dietary deficits of households.
- Do not lose sight of the marketability of food products. Collect and disseminate information on markets and quality requirements.
- Consider the opportunity to grow food products in the off-season of the lead crops. The additional income from selling food crops has an income-smoothing effect, especially in regions where rainfed agriculture predominates.

### What challenges are linked to production diversification?

Diversification requires investments of land, water, inputs, and working time. Smallholders can face a dilemma in terms of whether to allocate resources to producing plant- or animal-based food for their own consumption, or to invest in cash crops or animal rearing for sale. The following approaches help to tackle these challenges in a targeted manner.

- Compare gross margins of food crops and cash crops, and help smallholders make informed decisions.
- Check that the planting and harvesting seasons of different crops do not overlap. Rural households might face labour shortages.
- If the burden of additional farming activities – including animal husbandry and activities linked to diversification – is put on women, time available for care-giving will be reduced (e.g. cooking, breastfeeding, care of the sick and elderly). It is important to make communities and households aware

of this risk and encourage more equitable division of labour among household members.

### Off-farm income generation for women

In many regions of the world, commercial agriculture is a male-dominated activity. Women frequently lack the assets needed to engage in commercial farming, or are employed as unpaid labour force on their household fields. Cultural and traditional patterns holding back the economic empowerment of women take time to break.

At the same time, women invest a lot of their resources to improve the food security and nutrition of their families. While cash crop production might not be possible for women, opportunities for income generation can be found in off-farm activities. Women often purchase, process, and trade in local food products. However, they may operate outdated technologies, resulting in high labour intensity, low profits, poor quality, and low marketability of their produce.

To improve women's incomes, EAS can identify additional income sources and promote technical and technology improvements that decrease costs and workloads while increasing revenues.

Technical advice is one part of this; another part relates to the business models within which women operate. Women may be entangled in exploitative business relations, or may lack negotiation power on price setting. Extension advisory services can use cost–profit calculations to identify profits and losses, and determinants of costs and revenues. Once understood, such issues can be addressed by promoting innovative business models or introducing quality improvements that give women an edge on the market.

#### Box 1. Delivery in the local context

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) promotes nutrition-sensitive EAS with delivery methods tailored to the local context. In rice-farming systems, GIZ partners with rice millers and their extension agents to improve the production and incomes of farmers in outgrower schemes. In addition, GIZ mainstreams family nutrition education and technical advice on crop diversification (sesame, soybean, vegetables) in the EAS. To economically empower women, GIZ disseminates improved rice-parboiling techniques, and links women processors to off-takers. In cacao-producing systems, GIZ combines EAS on cacao production with extension messages related to diversification with nutritious crops and animal-sourced products. All partner extension agents are trained in business skills and nutrition education.

2 The integration of this set of measures aims to address the determinants of food security outlined in the UNICEF framework as access to food, availability, and utilisation. The UNICEF framework highlights additional determinants of food security: food assimilation, care, and stability. Extension advisory services alone have a limited mandate to intervene on these additional determinants. It is therefore advisable to seek collaboration with other initiatives or institutions.

## Capacities required

Core expertise in EAS rests in the production of traditional export crops and staples that are in the spotlight of government promotion policies. Technical know-how on good practices for the production of nutrient-rich crops may need mainstreaming, especially for crops that are new to a region (e.g. orange-fleshed sweet potatoes) or where advisory services are underdeveloped (e.g. animal husbandry and fisheries).

To address smallholders and their households not only as producers but also as consumers, EAS need to be aware of factors that influence food consumption, such as culturally and agroecologically determined eating preferences, cooking and hygienic practices, and inter-household decision-making processes.

The scope of EAS needs to be broadened from technical to business advisory. Business skills such as cost–revenue calculations need to be embedded in EAS and/or newly developed, particularly for activities undertaken by women.

Facilitation/community animation and participatory methodologies of EAS should be preserved and strengthened as they are more effective adult learning methods than top-down training and technology transfer.

Coordination and supervisory skills are critical to achieve delivery at large scale. Coordination efforts will be required at managerial level to ensure the systematic inclusion of nutrition-sensitive messages in the work of EAS and to guarantee that extension delivery is timed according to relevant cropping seasons (e.g. for nutrition-rich crops) and the availability of male and female household members.

## Costs

The integration of a nutrition-sensitive approach in agricultural value chains entails the following costs:

- investment in expertise to develop advisory messages related to nutrition education, business skills, and production techniques
- equipping extension agents with quality training materials (posters, guidelines, visual aids) to optimise learning by the target population
- management support to encourage supervision and coaching

- resources to ensure manpower, transportation, and allowances for extension agents
- seed funds for demonstration plots or for demonstrating improved technologies for off-farm activities.

## Strengths and weaknesses

The major strengths and weaknesses of integrating nutrition-sensitive advisory services in extension are shown in Table 1.

### Best-fit considerations

The extent to which public and private sector-led EAS can integrate nutrition-sensitive measures in their work depends on their mandate; the motivation to change what services are provided (what reason does the EAS have to provide nutrition-sensitive advice?); and the means (operational funds, staff and management capabilities, training, job aids). Table 2 lists some of the opportunities and challenges for the two sectors.

In any case, EAS must consider that integrating nutrition-sensitive measures in their services will put additional strain on staff time and resources. Conflicts in staff deployment between technical advisory and nutrition-sensitive measures are to be avoided.

## Evidence of impacts, sustainability, and scalability

### Impacts

Integrating a nutrition-sensitive approach within agricultural extension is quite a recent endeavour, but given the high priority that the global development agenda places on a multisector strategy to improve nutrition, it is on the rise. Preliminary evidence indicates that the largest impact of nutrition-sensitive EAS is in improving agricultural productivity, food production, and income generation from agriculture. This is only partially contributing to improving the nutrition of rural households. Progress towards this goal depends on the extent to which attention to gender and nutrition education are integrated into EAS.

### Sustainability

Sustainability of nutrition-sensitive messages in public-sector EAS requires a clear institutional mandate and sustained availability of resources. Despite some progress, this is not

**Table 1. Strengths and weaknesses**

Strengths	Weakness
<ul style="list-style-type: none"> <li>• Crop diversification through rotation, intercropping, and off-season production is a recognised strategy to preserve soil fertility and reduce pest incidence in cash-crop production. It does not conflict with the mandate of EAS.</li> <li>• Nutrition-sensitive extension messages are available and can be adopted and adapted to context with relatively low investments.</li> <li>• The approach responds to a systemic weakness of agricultural extension services through building the capacity of extension agents to integrate business and nutritional skills in their services.</li> </ul>	<ul style="list-style-type: none"> <li>• The approach does not address causes of malnutrition beyond the household level (e.g. high incidence of illness; lack of infrastructure to access clean water) nor does it inherently focus on better nutrition during the important first 1,000 days of a child's life.</li> <li>• EAS services are highly relevant for emerging farmers and smallholders with the potential to produce at commercial level. These services are not sufficient to address the needs of resource-poor (e.g. landless) households or subsistence producers, who are often the most affected by food insecurity.</li> </ul>

**Table 2. Opportunities and challenges**

Type of EAS	Opportunity	Challenge
Public	<ul style="list-style-type: none"> <li>• Large presence in rural areas</li> <li>• Existing relations to smallholders and broad outreach</li> <li>• Often a mandate to improve nutrition and women's empowerment</li> </ul>	<ul style="list-style-type: none"> <li>• Resource constraints</li> <li>• Management inefficiencies</li> </ul>
Private	<ul style="list-style-type: none"> <li>• More resources available</li> <li>• Access to information, communication, and other technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Companies need to be convinced of return on investment</li> <li>• Intervention limited to outgrowers and focused on specific crops</li> <li>• Didactic experience and knowledge may be lacking</li> </ul>

always a given. Private-sector EAS are dependent on the business decision of the company to which they are affiliated. Changes in commercial strategy that alter the mandate of an EAS to provide nutrition messages cannot be excluded.

### Scalability

Once the initial investment in capacity-building and know-how accumulation has been made, the scalability of nutrition-sensitive approaches is high, as relevant messages can be mainstreamed in the daily work of the EAS.

### Further reading

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GIZ Farmer Business School (FBS): <http://ssab.caadp.net/en/materials>

GIZ Family nutrition training module and GIZ Parboiling training module: <http://cari-project.org/downloads/reportstraining-material>

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This content was originally published in September 2016 as GFRAS Global Good Practice Note 25, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by the Competitive African Rice Initiative (CARI), Sustainable Smallholder Agri-Business (SSAB), and the University of Ghana with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)
- USAID Feed the Future Initiative
- Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

The publication of this note was made possible in part by the generous support of the American people through USAID. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

# Involving men in nutrition

Philip Erick Otieno, Cathy Rozel Farnworth, and Nelson Banda

## Introduction

Men often have priority when it comes to food: they may eat before everyone else and enjoy the most nutritious food. Women and children can be left with smaller portions and less nutritious meals. This exposes women and girls to a range of harmful physical and emotional health outcomes. Malnutrition has intergenerational consequences because undernourished women give birth to low birth-weight babies. Such children can face cognitive and other limitations all their lives, making it difficult to escape from poverty. When women face food discrimination on a national scale, the human capital of the nation is put at risk.

Integrating men in nutrition initiatives helps turn this situation around. By virtue of their power and privilege, men are in a prime position to tackle malnutrition in their own homes and in the broader community. In many households and communities, men make key decisions about what to grow and which animals to raise. They often decide what to sell, how much to store, and what foods to buy. However, many initiatives target women and girls, and ignore men. Women may learn a lot from courses on good nutrition, but excluding men means that women may not be able to act on their improved knowledge. Men may feel angry because their own nutritional needs are ignored.

In this note we discuss lessons elicited through discussions with staff from Men for Gender Equality Now (MEGEN) in Kenya; the Zambia National Men's Network (ZNMN); the National Association of Farmers in Malawi (NASFAM); CARE in Benin; GIZ and BRAC in Bangladesh; and USAID in Guatemala, Zimbabwe, and Kyrgyzstan. All boxed case studies are drawn from these discussions.

## Philosophy and principles

### Make good nutrition everyone's responsibility

Encourage men to talk about healthy food choices with their wives and children. Work with men together with women to plan how the farm can produce healthy food for the family.



© MEGEN

Stimulate discussions on how to purchase good, healthy food with the proceeds from cash crops and off-farm work.

### Be inclusive

Encourage men to think about the benefits to the whole family of eating nutritious food together with women and children rather than separately. Discuss the special needs of women during pregnancy, childbirth, and breastfeeding. Emphasise the importance of good nutrition to children's development.

### Build trust

Engage with men and boys about nutrition, taking time to win their trust and develop their confidence. This is the basis for changing behaviour and men's attitudes for the good of their families and communities. Be patient – change doesn't happen overnight. Work towards slow but sure change.

## Implementation

The best initiatives:

- have a bold vision but work to change norms from within by building on men's existing responsibilities
- work with agricultural, health, and behavioural change specialists
- work across individual, community, and institutional levels making sure to engage key indirect stakeholders and decision formers within the family and in the community

### Box 1. Men's perceptions of their roles

**Bangladesh:** "Men consider themselves responsible for food production and marketing. They believe good health and nutrition are essential to being strong and productive on the farm. They consider they play an important role in supporting their children's education and development. However, men are rarely interested in food preparation or the intricacies of food distribution, and they view these activities as a woman's domain. Yet decisions about spending on food fall predominantly to men,

since they buy the food. Research shows men are interested in being able to make informed purchasing decisions."

**Zambia:** "It is the man's responsibility to have food in the home, but it is not a man's role to distribute the food. In my community a man must ensure that there is enough food in the house at all costs because if there is not enough food for the family, a man is considered weak by his peers. He becomes a laughing stock."

- use innovative methodologies – conduct thorough research, develop a strategy, pilot, revise, pilot again, and use lots of different methods to say the same thing.

Culturally relevant data should be obtained alongside standard nutritional data such as the household dietary diversity score (HDDS) and individual dietary diversity score (IDDS)<sup>1,2</sup>. A rapid participatory assessment ensures the best ways of working on culturally specific gender opportunities and constraints can be identified.

### Move from personal to political

It is important to move beyond interventions that focus on individual responsibility for securing nutritious food because men and boys are embedded in wider structures that condition their behaviour. They must be supported as they begin to confront and question the cultures at home, in the community, at work, and presented by the media, which shape their psychological and social identities. Activities might include:

- developing men-only groups to help men support each other in changing their behaviour and challenge concepts and practices related to traditional ways of being a man
- strengthening men's personal commitment to gender equality and equipping them with the nutritional and agricultural knowledge and skills to put that commitment into practice in their own lives
- relating messages to men as fathers.

### Get everyone on board

The promotion of community-wide change in attitudes and practices is vital. In some places, reforming traditional councils and local decision-making bodies is a cornerstone of securing support for cultural changes regarding rights to nutritious and sufficient food for all. Actions include:

- developing community-based awareness campaigns aimed at mobilising policy-makers, media, and other opinion formers
- involving communities in nutrition assessments, defining health and nutrition priorities, planning interventions, and monitoring and evaluation.

### Create multi-disciplinary teams

Some approaches to team building are outlined below.

- Training clinic staff, community nutritionists, and extension workers on the gender dimensions of health and nutrition ensures they understand men's roles and responsibilities and ways to get men on board.
- Training rural advisory services (livestock, fish, crops) and input providers on how to include nutrition advice in their work helps farmers create a farm capable of providing healthy and sufficient food. Data obtained from the IDDS and HDDS can help guide this work.

### Box 2. Peer pressure

**MEGEN Kenya:** "We can't go on thinking and believing that we are superior to women. However, we have a lot of pressure as men from our families, friends, and workmates expecting us not to change. We conform because we are afraid to be laughed at or be stigmatised or be called 'weaklings'. These fears make it difficult for us to put into practice the discoveries that we're making in this workshop."

### Box 3. Commitments and trust

**CARE Benin:** "At the end of each meeting, members make small commitments to try a new behaviour or speak to someone about what they learned. Reviewing these small commitments at each meeting facilitates peer learning, helps reinforce new behaviours, and supports group members."

**GIZ Bangladesh:** "First we conduct gender training with influential community leaders. We then work with men, including training on improved agricultural inputs, developing their understanding, and showing this is about the betterment of themselves and their families. Trust is won once they see the impact of the changes they are making and they become open to bigger ideas. We build on traditional behaviours, make sure our messages are simple, and use many methods including cooking demonstrations, games, entertainment, educational materials, and role-plays."

- Involve behavioural change specialists where possible.

### Be innovative

Seek out new partners and methodologies. Repeat the message in many different ways in different groups, and tailor the message to the target group. Keep the message simple, do-able, and fun. Some projects work through village savings and loans associations because men are often interested in making money. Some value-chain projects include farm planning for good nutrition.

### Share knowledge

Right from the start, share lessons with people and organisations from community, to national, to global level. This builds critical mass for change and ensures the best methods are taken to scale quickly.

- **For men and other primary target groups:** produce learning aids, talking books, education modules, and handouts. Develop visual tools as well as materials written in local languages.
- **For external stakeholders (partners, research institutions, and donors) and internal stakeholders (programme staff):** participate in workshops and conferences; share evaluation reports; prepare 'how to' notes; post blogs, etc.

1 SPRING. 2006. Household dietary diversity score. Washington, DC: United States Agency for International Development. Available at: <http://www.spring-nutrition.org/publications/tool-summaries/household-dietary-diversity-score>

2 Kennedy, G., Ballard, T. and Dop, M.C. 2011. *Guidelines for measuring household and individual dietary diversity*. Rome: Nutrition and Consumer Protection Division, Food and Agriculture Organization of the United Nations. Available at: [http://www.fao.org/fileadmin/user\\_upload/wa\\_workshop/docs/FAO-guidelines-dietary-diversity2011.pdf](http://www.fao.org/fileadmin/user_upload/wa_workshop/docs/FAO-guidelines-dietary-diversity2011.pdf)

## Capacities required

All partners must have a good knowledge of the target areas (agroecological, sociocultural, political) and they should be able to identify, and work positively with, local knowledge. We recommend building on the methodologies and lessons learned developed by the men's movements for gender equality in various countries. As the project progresses, the

### Box 4. Lessons from Kyrgyzstan and Bangladesh

**USAID Kyrgyzstan:** "We contract with agriculture service providers to provide training to farmers (many of whom are male) on water, sanitation, and hygiene (WASH); agricultural WASH; and diet diversity. We have a home budgeting training day for spouses to learn together about ensuring equitable spending decisions. A diet diversity session during the training day delivers nutrition messages."

**GIZ Bangladesh:** "Men, as key rice farmers, receive training on application of zinc foliar fertilisers to increase the zinc content of rice grains. The training includes messages on crop and human nutrition, and overall understanding of zinc's dietary function."

### Box 5. Lessons from Malawi and Guatemala

**NASFAM Malawi:** "We train farmer members of Gender, HIV and Aids nutrition subcommittees in every NASFAM farmer club to train other farmers. They invite men and women to bring foodstuffs from their homes and ask them to categorise them into six food groups. We show that all six food groups can be procured from their homes and that they can have a balanced diet. The belief is widespread that this is not possible because they are so poor! The trainers give tips on minimising nutrient loss through cooking, and demonstrate how one meal can have items from all food groups. Everyone – men and women – then cooks together and shares their food. The trainees are provided with simple planning tools such as a food availability calendar to help them plan for difficult times by preserving and storing key foods."

**USAID/Anacafé Rural Value Chains Project Guatemala:** "We provide men with delicious, varied dishes with a high nutritional value based on the crops they grow at home. This motivates them to bring their spouses to the workshops so they can learn how to prepare the same dishes for the family."

### Box 6. Lessons from Benin

**CARE Benin:** "All local partner facilitators are based in target communities. They are very familiar with the sociocultural context in which the programme is implemented. Community health workers work closely with facilitators to promote growth, monitoring, and promotional and community health activities, such as Child Days. Community health workers are highly involved in community mobilisation surrounding local health and nutrition events."

skills of the ever-increasing presence of gender-sensitive men in the community should be built upon.

Facilitators need experience in enabling participatory, bottom-up development processes. They need to be enthusiastic and believe in men's ability to change. They should be committed to open dialogue and learning based on respect and understanding for members of the community. Facilitators, particularly male facilitators, must be able to 'walk the talk' and reject the benefits conferred upon them by virtue of their gender.

## Costs

The cost of engaging men varies according to the size of the target group, location, and type of activities planned. These may include a baseline survey, implementation, and final evaluation. Specific costs include salaries, overhead costs of implementing partners, costs associated with training and mentoring, and possibly exposure visits. Other costs include developing training and advocacy materials, and operational costs.

## Strengths and weaknesses

Working with men in nutrition initiatives is very new. More needs to be learned about men who have changed in order to understand their recipe for success. Resources are required to train extension workers on how to integrate nutrition in their work and train them in effective strategies for engaging men. Data on nutritional gaps and sociocultural norms – including the nutritional needs of men – must be secured in most communities.

## Best-fit considerations

### Fit to national plans

Ensure the programme's design and implementation strategy fits well within a country's national development vision and has the potential to generate high levels of support in relevant ministries. Where possible, sit in interministerial and interagency working groups responsible for food and nutrition security.

### Be context-specific

In some communities it can be more effective to target men alone, as in the case of Zambia through the Men's Campfire

### Box 7. Considering the costs

**USAID/Anacafé Rural Value Chains Project Guatemala:** "We want to replicate this project in other communities but this will be expensive. We need partners. The total cost of the project was approximately US\$5 million for five years."

**NASFAM Malawi:** "Costs are minimal because the structures exist already. NASFAM works through existing committee members who are all volunteers. Costs include committee members using a bicycle taxi to get from their homes to the training venue, and the costs of cooking oil and salt."

**CARE Benin:** "US\$300,000 per year for a five-year complex programme to reach 70,000 men, women, and children by year four."

Table 1. Results from the GIZ-led ANF4W project

Who decides?	Decision regarding wife's food consumption (%)		Decision regarding man's food consumption (%)	
	Control (n = 175)	Intervention (n = 158)	Control (n = 175)	Intervention (n = 158)
Men decide alone	54	2	61	1
The family decides together	10	75	21	60
Only the wife decides	36	22	18	39

Conferences. In other cases joint activities and awareness-raising activities are appropriate, as in Kenya where MEGEN uses intergender and strategic dialogues to reach out to men and women. The most appropriate approach should be contextualised and should include participation and a thorough community assessment.

### Go to where men are

Find men where they socialise rather than expect them to come to you. Enter and build positively upon male spaces while at the same time tapping into like-minded men who are already persuaded by your ideas. Encourage such men to become role models for others. Involving boys in peer-group learning is important and helps in cultivating positive attitudes that are carried on into adulthood.

## Governance

### Walk the talk

Work on nutrition is more effective when backed up with changes throughout partner institutions. This is not just about securing technical changes to health status but – critically – about demonstrating through everyday interactions that partners take gender equality seriously.

## Evidence of impacts, sustainability, and scalability

If the project is to succeed, the benefits of change must be recognised immediately by men during implementation. Several projects have developed behavioural change indicators alongside more conventional indicators focusing on improvements in key aspects of nutrition. BRAC measures the support of fathers in early initiation of breast feeding, exclusive breast feeding, meal frequency of children, and childcare. Table 1 shows the changes demonstrated by the GIZ-led Affordable Nutritious Foods for Women (ANF4W) project<sup>3</sup>, which also produced gender-disaggregated data on dietary diversity, etc.

Advocacy is essential. Be innovative in spreading the message and get men and boys involved as role models and agents of change. Make smart use of social media, posters, music, and drama. Attract a wide public through digital stories and radio/TV interviews.

## Further reading

BRIDGE. 2014. MenEngage Global Symposium tackles patriarchy, masculinity and gender justice. *Gender News* 20 November. Available at: <http://www.bridge.ids.ac.uk/news/menengage-global-symposium-tackles-patriarchy-masculinity-and-gender-justice>

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This content was originally published in September 2016 as GFRAS Global Good Practice Note 26, available to download at <http://www.betterextension.org>.

This Global Good Practice Note was produced by Men for Gender Equality Now and the Zambia National Men's Network together with Cathy Rozel Farnworth with financial support provided by:

- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- CGIAR Research Program on Policies, Institutions, and Markets (PIM)
- USAID Feed the Future Initiative
- Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES)

This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This content has not gone through IFPRI's standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of IFPRI.

The publication of this note was made possible in part by the generous support of the American people through USAID. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

3 GIZ. 2013. Affordable Nutritious Foods for Women (ANF4W). Available at: <http://www.giz.de/en/worldwide/25670.html>

- Note 0** Overview of extension philosophies and methods
- Note 1** Innovation platforms
- Note 2** Farmer field schools (FFS)
- Note 3** Mobile-based 'bundled' services: example of Agri-Fin Mobile
- Note 4** Integrating gender into rural advisory services
- Note 5** Enabling rural innovation
- Note 6** Videos for agricultural extension
- Note 7** Farmer-to-farmer extension
- Note 8** Management advice for family farms to strengthen entrepreneurial skills
- Note 9** Integrating nutrition into rural advisory services and extension
- Note 10** Rural resource centres: a community approach to agricultural extension
- Note 11** Navigating ICTs for extension and advisory services
- Note 12** The role of producer organisations in rural advisory services
- Note 13** Agricultural innovation systems
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- Note 15** Social media for rural advisory services
- Note 16** Web portals for agricultural extension and advisory services
- Note 17** mExtension – mobile phones for agricultural advisory services
- Note 18** Using radio in agricultural extension
- Note 19** Service provision by agri-cooperatives engaged in high value markets
- Note 20** Farmer study circles
- Note 21** Innovative financing mechanisms for demand-driven agricultural advisory services
- Note 22** Edutainment TV for disseminating information about agriculture
- Note 23** Plant health clinics
- Note 24** Extension campaigns
- Note 25** Promoting nutrition-sensitive extension advisory services
- Note 26** Involving men in nutrition
- Note 27** Professionalisation of rural advisory services
- Note 28** Rural advisory services curriculum development
- Note 29** Private sector provision of rural advisory services
- Note 30** Rural advisory services for agripreneurship development

