AGAINST THE GRAIN AND TO THE ROOTS

Maize and cassava innovation platforms in West and Central Africa

Sidi Sanyang, Rhiannon Pyburn, Remco Mur
and Geneviève Audet-Bélanger (editors)

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FOREWORD

This book is a timely publication, especially in a year that has been dedicated to agriculture by the United Nations. It presents a tool, the innovation platform, which is becoming an effective vehicle for collaborative learning and change in the way agricultural research and development delivers new products and services for the benefit of poor smallholders. The innovation platform is applied based on the principles of the integrated agricultural research for development (IAR4D) within the broader context of innovation systems thinking. The title "Against the grain and to the roots" demonstrates the complexities in understanding and putting into practice the principles and concepts of IAR4D and innovation systems in general. It is, therefore, important to have a common understanding in applying innovation platforms in value chains, food systems and natural resource management, as well as assessing its relevance in contributing to agricultural development.

I, therefore, welcome the idea of this book, which takes into consideration, the central role of the innovation platform as a potential impact infrastructure in West and Central Africa that could contribute to enhancing adoption of agricultural technologies and innovations, taking producers and their organizations to markets, as well as promoting institutions that inform evidence-based policy making and good governance of agricultural research and development.

Innovation platforms are in effect at the heart of agricultural development in Africa. Their role in the dynamics of agricultural reform processes is of major importance in the transformation of agriculture that most countries in Africa wish to pursue over the next ten to twenty years. Agricultural research for development is currently at a crossroads. Development partners and national governments continue to invest in agricultural research for development, which we know has a strong tendency to deliver immediate outputs. On the other hand, development partners and national governments are also calling for the immediate delivery of development outcomes and impacts. In the face of this challenge, the widespread use of innovation platforms is a rational option that could help in meeting the two complementary demands of "output" to show progress and "outcome and impact" to demonstrate significant changes in the performance of the system and the people it serves. I therefore consider the systematic use of the innovation platform an absolute necessity and for which Africa, more than any other continent in the world, has the responsibility to propagate; taking into account, the high potential of research products that could be put into use.

This publication is a result of seven years of financial and intellectual investment on a complex subject, which has been relatively poorly understood by agricultural stakeholders. For CORAF/WECARD in particular, demonstrating the use of innovation platforms represents a particular challenge. It examines how innovation platforms work by bringing together a group of diverse but interdependent stakeholders to meet pressing food security demands with respect to maize and cassava food crop systems and value chains in West and Central Africa. The publication reveals the need for new thinking and new

organizational constellations rooted in local and national dynamics, alongside an appreciation and inclusion of long-standing actors. Addressing the issues of how national research organizations can use innovation platforms to strengthen innovation capacity and gaps in sector development, is a first and important step to clarify answers to questions on the capacity and relevance of the innovation platform in contributing to agricultural development.

The fact that this book recognizes and promotes innovation platforms as one of the major levers for ongoing rural transformation in West and Central Africa, is a stimulus for national and regional agricultural research for development. It also aligns to Africa's vision of an agriculture, which gives more responsibility and pride to our producers and their organizations. This collaborative work is surely a milestone in the engagement of CORAF/WECARD to address fundamental questions for sustainable agricultural development in the West and Central Africa.

Dr Harold Roy-Macauley
Executive director
CORAF/WECARD

PREFACE

This book is about agricultural research, my favourite topic. More precisely: it reports research on a special effort in agricultural research. And special effort is exactly what the doctor ordered.

Agricultural research in West and Central Africa faces formidable challenges. Since 2008 food prices have risen, and smallholders are beginning to look at food farming as a business, beyond subsistence and a source of money to pay for such essentials as school fees. They need help to improve their practices, as well as conditions that enable them to innovate and capture opportunity. The population in the region continues to grow rapidly, and its cities are growing even faster. Food production is still increasing largely by bringing more land into production, or using the same land more often, and not because of better yields. A large proportion of food requirements is still satisfied by imports. With available technology, the productivity of the vast land, water and human resources in the region could relatively easily double or treble – but this has not yet happened. Climate change is expected to affect the region disproportionately, hitting especially such drought-sensitive crops as maize, oil palm and cocoa.

So far, the limited investment in the region's agricultural research has had a low rate of return. Research has continued to produce technologies that have largely remained on the shelf. This is not so much because of the collapse of public extension services. It is because innovation is constrained by the lack of access to inputs, credit, markets and effective value chains, as well as a lack of protection against exploitation, profiteering, corruption, rent seeking, dumping and land grabbing. Time and again, and corroborated by the cases in this book, African smallholders prove remarkably entrepreneurial the moment realistic and remunerative opportunities become available.

Agricultural research is expected to provide leadership in creating such opportunities. Yet it has continued to focus on the production and promotion of technologies with limited impact on the ground. It turns out to be hard to kick that habit. My favourite example is a project of the UK's Department for International Development called Research Into Use (RIU, Clark 2014) that was meant to create developmental impact for an earlier project, Renewable Natural Resources Research Strategy, that between 1995 and 2005 invested £350 million in 1,600 agricultural research projects in sub-Saharan Africa and South Asia, with little to show for it. And so RIU (£37.5 million) started off with… trying to promote technologies that were on the shelf. The francophones call it "*mise en valeur*". It is only after RIU's mid-term evaluation showed that this approach was ineffective that radically new strategies were attempted.

Against the grain and to the roots reports on DONATA, an attempt by CORAF/WECARD and its 22 members, together representing virtually all the African (i.e., not CGIAR) agricultural research effort in West and Central Africa, to renew its own practice and become more relevant for its smallholder constituents. It is a story of a struggle, tremendous learning and intrepid innovation. The approach tested by DONATA is the **innovation platform**. Twenty years ago, I became aware of the value of platforms of stakeholders in natural

resource management (Röling 1994). Innovation platforms allow key actors in an agricultural domain to be convened and facilitated to interact so as to develop a common vision and take concerted action. This common base still allows for a wide range in the ways in which innovation platforms are deployed.

Type-1 innovation platforms Typically, agricultural researchers see innovation platforms as tools to promote the utilization of best practices among farmers, often coupled with provision of packages of high-yielding planting material, fertilizers and credit. This book provides interesting case studies of type-1 platforms. The package approach has, of course, been used many times before. The added value of innovation platforms is that bringing together service providers, finance and microfinance organizations, traders, policymakers, researchers and other actors allows for all kinds of interesting things to happen. Actors learn about each other, learn to trust each other, begin to understand their interdependence, and experiment with forms of collaboration that benefit all, such as collective marketing and seed system development. That is when agricultural domains begin to move from arenas of struggle to integrated value chains, industries, or organized market sectors to the benefit of consumers, producers, processors, traders, retailers, and ultimately the nation as a whole. I found this aspect the most rewarding in the case descriptions.

Type-2 innovation platforms Innovation platforms can also be used more explicitly to create enabling conditions for smallholder innovation. When used in this way, the platform is not based on an a-priori decision about what should happen (e.g., that a certain variety of maize should be introduced). Instead, the platform's entry point is chosen on the basis of scoping and diagnosis of the conditions, opinions, experiences, felt constraints and perceived opportunities of smallholders in an agricultural domain. Such a process often leads to entry points that (1) are not technological but institutional (e.g., the seed system, not the seeds), (2) focus on higher levels than the field or farm to remove constraints or realize opportunities, and (3) represent system innovation rather than product innovation. The CoS-SIS programme that operated in Benin, Ghana and Mali used this approach (www.cos-sis.org).

This book's appearance is timely. CORAF/WECARD is about to embark on its second operational plan (2014–19). During that period, the aim is to implement integrated agricultural research for development (IAR4D), which will feature both type-1 and type-2 innovation platforms. DONATA has offered CORAF/WECARD and its partners in different member countries tremendous opportunities to experiment with innovation platforms. Such experimentation has no value if the lessons learned are not systematically gathered and synthesized. And that, to my opinion, is the contribution of this book. It is written in an engaging way, and the QR codes give direct access to films to support some of the documentation. Let us hope that it will be widely read, especially by those involved in implementing IAR4D.

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March 2014

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Finally, this book would not have been possible without the financial support provided by the African Development Bank through the Forum for Agricultural Research in Africa. We are grateful for ongoing interest in these issues.

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DONATA: A SUMMARY

The Dissemination of New Agricultural Technologies in Africa (DONATA) initiative, 2007–14.

Purpose and objectives

- To capture relevant lessons and facilitate effective collaborative learning and investments for the dissemination of high-potential technologies.
- To identify the most profitable and environmentally beneficial African model crops, best bets, and other agricultural enterprises for scaling up and out where currently not accessed and utilized.
- To analyse challenges and opportunities using a value chain approach, agricultural best bets and the dissemination of success stories.
- To develop toolkits that support targeting best bets to where they fit prevailing social, environmental and market conditions.

Regions and domains

DONATA is coordinated by the Forum for Agricultural Research in Africa (FARA), and operates in three regions. In each region it is coordinated by a sub-regional organization. Each region focuses on two domains (maize and one other crop):

- **West and Central Africa (cassava and maize)** West and Central African Council for Agricultural Research and Development (CORAF/WECARD)
- **East Africa (orange-fleshed sweet potatoes and maize)** Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)
- **Southern Africa (sorghum and maize)** Centre for Coordination of Agricultural Research and Development in Southern Africa (CCARDESA).

DONATA in West and Central Africa

In this region, DONATA is active in 14 countries: Republic of Benin, Burkina Faso, Cameroon, Chad, Republic of Congo, Côte d'Ivoire, The Gambia, Ghana, Guinea, Liberia, Mali, Senegal, Sierra Leone, and Togo. Within each country, one person based at the national agricultural research institute is designated as that country's focal point.

Funding

DONATA is component II of the Promotion of Science and Technology for Agricultural Development in Africa (PSTAD) project. This is one of several regional initiatives funded by the African Development Bank through FARA.

Management

Programme manager for knowledge management and capacity strengthening Responsible for DONATA at CORAF/WECARD: Dr Sidi Sanyang

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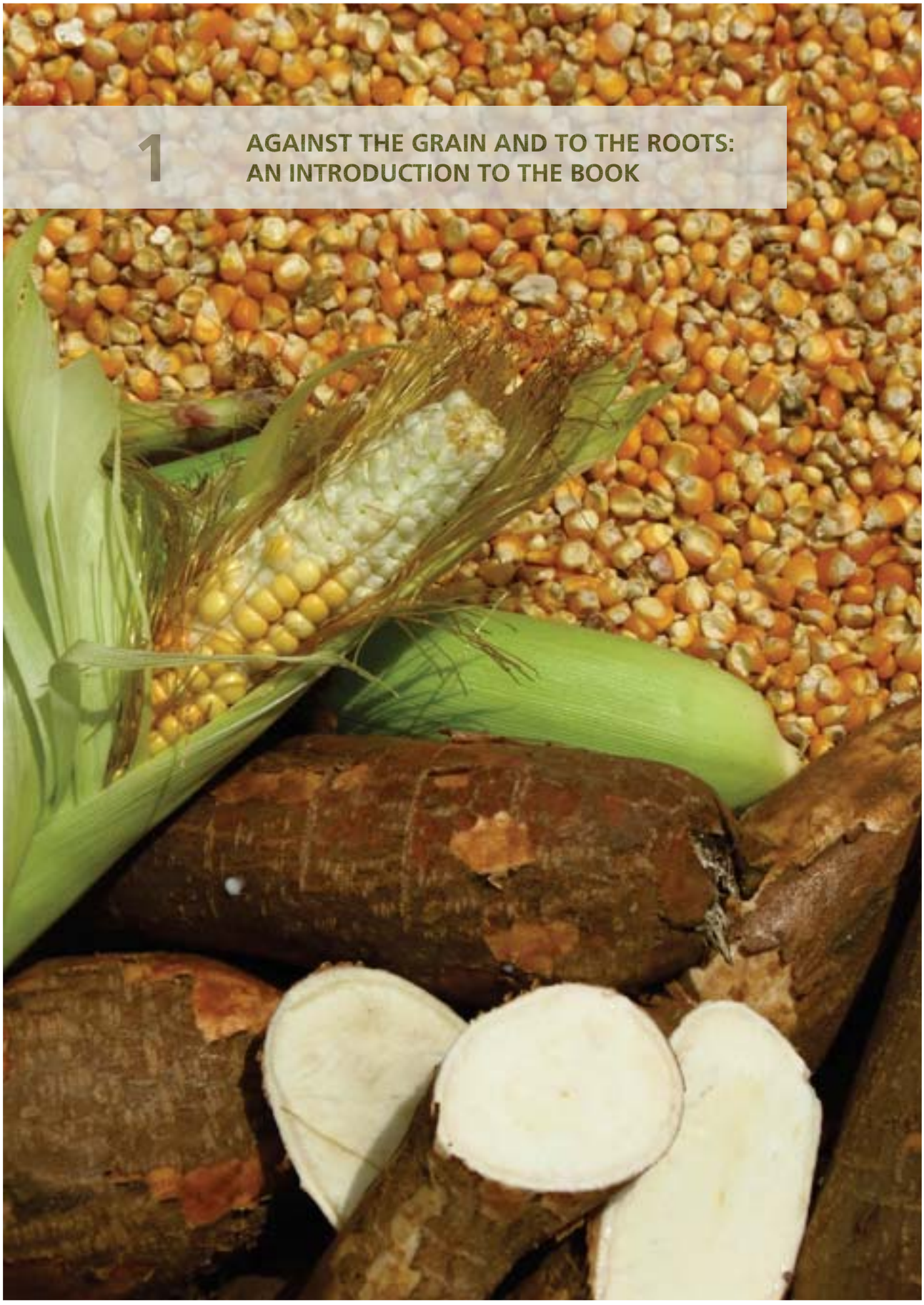
1 AGAINST THE GRAIN AND TO THE ROOTS: AN INTRODUCTION TO THE BOOK



Previous page: Maize and cassava: two of West Africa's most important staple crops

Photo: Geneviève Audet-Bélanger

1 AGAINST THE GRAIN AND TO THE ROOTS: AN INTRODUCTION TO THE BOOK

Sidi Sanyang and Rhiannon Pyburn

Bringing a group of diverse but interdependent stakeholders together to build and stimulate the cassava and maize sectors both goes "against the grain" and "to the roots" of agricultural development in West and Central Africa. It requires new thinking and new organizational constellations, alongside an appreciation and inclusion of long-standing actors in these food crop systems. These actors include men and women farmers, primary processors, transporters, traders, researchers, extension workers, policymakers and input suppliers, to name just a few.

Against the grain Meaningful change requires shaking up the status quo: re-thinking, re-acting in the current context to create a better circumstance. It challenges existing norms and ways of getting things done, in order to build a more efficient, fruitful future and more resilient institutions. Such change rarely unfolds smoothly or without tensions – that is to say, it often goes "against the grain". In English, the expression "going against the grain" describes an action against the general tendency, norm or expectation. In addition to grains – maize specifically – being one of the two crops we explore, the imagery of "going against the grain" fits neatly into one of the messages of this book: we need to do things differently in order to meet the pressing food security demands in West and Central Africa.

And to the roots Then we have cassava – a root crop and staple food in many countries of the region. The changes and developments addressed by the innovation platforms we present in this book demand getting "to the roots" of the problem. This captures a second key message of this book. Innovation platforms bring stakeholders together as well as returning "to the roots" of the sector: the farmers and primary processors who are at the foundation of food production. Solutions and innovations must be rooted in local and national dynamics.

Innovation platforms go "against the grain" of the status quo. And they go "to the roots" of the challenges and potential solutions in food systems in West and Central Africa. Examples in this publication come from two sectors, both key food-security crops: maize – a grain, and cassava – a root.

An overriding question of this book is: how can national agricultural research organizations use innovation platforms to strengthen innovation capacity and address capacity gaps in sector development? Our aim is to share the experiences of the national agricultural research systems, and real-life stories of the challenges and successes in facilitating innovation platforms. How can innovation capacities be strengthened? What steps need to happen? What skills are required? How sustainable are innovation platforms? Further,

the chapters of the book take up several sticky issues and engage with them critically: policy pathways, gender equity and inclusion, and knowledge and information sharing.

This introductory chapter begins by providing context on food crops, food security and the importance of women in production, processing and trade. It goes on to trace the development of agricultural research and extension. It then gets to the heart of the matter – innovation platforms – what they are and how they work. From there we introduce DONATA, an initiative involving all of the cases presented in this book. We look at how it was set up and how it interpreted innovation platforms in cassava and maize sectors in West and Central Africa. The final section of the chapter provides a road map for reading the chapters ahead. It introduces the films made in the field and orients the reader as to how to access them for viewing. And it presents a key to the icons that flag the conceptual issues addressed throughout the book.

Food crops, food security and women

"Agriculture is everybody's business. We all need food."

– Babou Ousman Jobe, Director general, National Agricultural Research Institute, The Gambia, 9 July 2013

Food security The need for enough, good-quality, food is inarguable. Yet despite global increases in food production per capita – well over 130% since the 1960s – major distributional inequalities exist, primarily linked to poverty (Thompson 2003, Thompson et al. 2007:8). The Food and Agriculture Organization of the United Nations (FAO) estimates that 925 million people are undernourished, which is equivalent to almost 16% of the population of developing countries (FAO 2010). Disturbingly, 78% of countries that report child malnutrition export food (Mittal 2006). The development agenda has tended to focus very much on export-oriented value chains like cocoa, coffee, cotton, sugar and tea, which account for 50% of Africa's total agricultural exports (Diao & Hazell 2004). It has neglected rainfed crops and the research that deals with them (AFD et al. 2013:23). While countries such as Côte d'Ivoire, Ghana, Kenya and Zambia have had success in higher-value export crops like flowers, fruits and vegetables, in many cases an export focus has not delivered the expected development benefits (Delnoye & Mangnus 2012). This is particularly important for small and medium producers, who according to FAOSTAT export only 3% of their total output (cited in Delnoye & Mangnus 2012). These small and medium producers already cater largely to local food needs and local and domestic markets.

The tide is now turning towards domestic and regional markets, which offer significantly more development potential in terms of local economy, food security and poverty alleviation (Delnoye & Mangnus 2012). This is not a new phenomenon in West Africa, where some governments promoted national

food self-sufficiency in the 1980s. However, the 1990s saw a shift towards a broader notion of food security built on international trade, historical and regional patterns, and comparative advantage (USAID 2008:27). The world food crisis reversed this trade-based strategy in many countries in the region, away from reliance on international trade and towards restricting the export of food staples to neighbouring countries. That led to painful consequences both for farmers (where prices were held down) and for consumers in the neighbouring countries (where prices rocketed) (ibid.).

As a result of rising world agricultural prices since 2008, many countries in West Africa have launched programmes aimed at self-sufficiency in staple food crops (ibid.; AFD et al. 2013:31). Food security crops are thus coming into the limelight for poverty reduction, and a clear economic argument can be made for this focus. The African Development Bank places particular importance on the middle classes in terms of balancing the continent's economies towards more reliance on domestic demand and away from a dependency on exports (Delnoye & Mangnus 2012). The logic is that this will lead to more inclusive growth and more efficient poverty reduction. Indeed, a large share of food crops is now sold on the market, especially in urban areas, allowing farmers and other value chain actors to glean income from food crops and enabling them to meet their own food needs. Thus, food crops have become a "strategic product for food security and poverty alleviation" (AFD et al. 2013:31). Indeed, the urban market is now a more profitable outlet than export markets, for example in Mali where local market sales of food crops accounted for $419 million compared to exports that generated $259 million (ibid.:46). A "food crop culture" (ibid.:23) is being re-established.

Then there is the health and well-being argument for a turn towards food crops and food security. An estimated 27% of the population of sub-Saharan Africa, or 240 million people, are chronically undernourished (IFAD et al. 2012). Local food systems that support access to nutritious foods have a key role to play in the shift towards healthier diets (FAO & WHO 2004; Veen et al. 2013). The challenge is to look at value chains with a new lens: one that focuses on affordable and nutritious food rather than just profit (Veen et al. 2013). This will have inevitable benefits to society at large as well as the individual farmers growing the food. It also fits snugly within regional policy priorities like those of the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (UEMOA) that can be summed up as: "eat what you grow and grow what you eat". In 2005 the ECOWAS regional policy priorities included "the promotion of food crop supply chains with strategic value for food security" and "the reduction of food vulnerability and the promotion of stable and sustainable access to food" (AFD et al. 2013:25). Likewise, the Central African Economic and Monetary Community's common agricultural strategy in 2003 included pillars related to, "support for the agricultural and food production sector" and more importantly, the "establishment of sub-regional strategic food stocks" ibid.:27).

Gender issues In addition to economic (poverty reduction) and health and well-being (food security) components, food crops offer a third element of interest: they tend to be largely the domain of women. While men often work in cash crops and for export or more lucrative markets, women tend to be re-

sponsible for household sustenance through food crops and home gardens, as well as food processing and preparation. Their work is both paid and unpaid. An estimate 43% of the agricultural labour force in developing countries is provided by women: this number rises to 62% in sub-Saharan Africa (FAO 2011). Meinzen-Dick et al. (2011) point out the particular challenges facing women in the agricultural sector, including limited resources, and that addressing those challenges is vital for increasing overall productivity. In addition, women often play key roles as traders and in marketing agricultural products (UNCTAD 2011:1). Indeed, food processing on a small scale is done almost exclusively by women; however, these micro-businesses are rarely accounted for in development policies (AFD et al. 2013:10).

As the World Bank and IFPRI (2000:xxxi) report *Gender and governance in rural services* found, there is a pervasive bias against women in agriculture: the "women don't farm" perception persists despite women's engagement in many agricultural activities. This perception is particularly flawed with the feminization of agriculture, as migration, HIV/AIDS and other factors have led to more and more women-headed farming households. When it comes to food crops and food security, women are brought even more to the forefront. Typically it is women who have had the responsibility for feeding families and growing food crops for home consumption. Their roles in domestic food security are paramount: women's contributions to household food production increase the intake of essential micronutrients by family members, especially children (Manfre et al. 2013:3). As this book looks at cassava and maize crops – food crops that are indeed grown for family consumption as well as for local and regional markets – women are key stakeholders. FAO estimates that reducing gender inequalities in access to productive resources and services could increase yields on women's farms by 20–30%, raising agricultural output in developing countries by 2.5–4% (FAO 2011). Yet the bias against women in agriculture, coupled with the "triple challenge" of market, state and community failure (World Bank and IFPRI 2010: xxv) makes service provision, including agricultural extension, very difficult. Food security initiatives need to meet women-specific challenges related to technology and livelihoods in order to effectively make a difference.

Gender and inclusion do not appear in the next section, which reviews the evolution of thinking on agricultural research and extension. This is because until recently these issues have been largely neglected in the innovation systems puzzle. The "training and visit" approach focused almost exclusively on men (World Bank et al. 2009:280). Based on Murenzi et al. (2010), UNCTAD lists several key issues related to women in innovation systems, including structural impediments affecting "preconditions for participation" such as access to education, capital and markets (UNCTAD 2011:16). Further, they cite the issue of "innovation by women for women's needs" (ibid.). This is related to market access, access to technologies and participation in shaping technological developments that meet women's needs and in adding value to farming products. Gender and inclusion are a recognized gap in innovation systems thinking. It is only in recent years that these issues are gaining some traction. Finally we are seeing a burst of interest and concern on this overlooked yet vitally important topic. We return to this issue in Chapter 9.

Rainfed food crops Rainfed crops support poverty reduction and job creation by improving regional food security and increasing farmer incomes (AFD et al. 2013:7). Production of these rainfed crops in West and Central Africa has risen noticeably since the mid-1980s (ibid.:31). However, the trend for rural people to move away from traditional crops and diverse ingredients in their food and towards a less nutritious diet is worrisome (Meridian Institute 2013).

This book is about cassava and maize, two of the most important rainfed food crops in Africa. Grain production in West and Central Africa increased threefold from 1982 until 2007, with maize production increasing fivefold (ibid.). Likewise roots and tubers have seen significant increases in production with a threefold increase over the past 20 years (ibid.:32). Recent research in West and Central Africa found that two-thirds of food crops are consumed by the rural population but that urban markets are playing more and more important roles, taking 40% of the maize and up to 50% of the roots and tubers (AFD et al. 2013:42).

This book's focus on food security crops is a marked departure from a lot of the work done on value chains and innovation platforms, which have dealt more with cash crops and export markets. As such it offers insights on the dynamics of food security and innovation within food crop systems. More background on maize and cassava can be found in the introductions to Chapters 3 and 4.

The state of the art of agricultural research and extension

Research trends We have seen some significant shifts in research paradigms over the past 50 years. Approaches have progressed from a research-hub focus relying on research–extension–farmer linkages, to more interactive, farmer-centric and systemic approaches (e.g., farming systems research, and participatory methods). But the original transfer of technology model still predominates, despite it being demonstrably less than effective than more recent developments. In ground-breaking work, Chambers et al. (1989) argued that the way agricultural research and extension was organized was a major constraint to the effectiveness of science in improving the livelihoods of the poor. Further, they argued that the linear research–extension–farmer relationship and the technology transfer model championed by public extension services in 1960s and 1970s, as well as the training and visit system promoted by the World Bank in parts of Africa in the 1980s, were all ill-suited to agricultural research for development. Participatory approaches made significant contributions to agricultural technology and the generation and adoption of innovation in the 1990s. Since then value chain thinking has entered the scene, adding an economic, market-oriented, value addition perspective (see the KIT value chain series: KIT et al. 2006; KIT & IIRR 2008; KIT & IIRR 2010; KIT et al. 2012). But neither participatory approaches nor value chain thinking directly addressed the combinations of institutional, organizational and technological change required in a systematic or consistent manner.

Need for investment in technical research and a shift towards client responsiveness The poor performance of agriculture in sub-Saharan Africa is in

part due to the lack of effective and client-responsive agricultural research and development that could generate appropriate technologies and innovations to stimulate the agricultural development process. Despite positive trends, many national agricultural research systems are unable to provide sufficient research of the quality required. Yet the need is great: feeding the world in 2050 would require food production to increase by 70% globally, and by up to 100% in developing countries (EIARD 2009). To add to the challenge, investment in agricultural research in sub-Saharan Africa is lower than in any other region of the world. A recent report stated that the total agricultural research investments for the whole of sub-Saharan Africa in 2000 were lower than India's and equivalent to half of China's (Wright et al. 2007). Clearly, technological innovation is critical, and national research systems need more investment. They also need to improve and become more client-responsive and effective.

Institutions and institutional innovation But this technology and research angle sheds light on just one part of the problem. There is more to the innovation story than just research and technology. Institutions and institutional innovation are another piece of the puzzle. What do we mean by institutions? For the purposes of this book we use a definition drawn from the field of institutional economics, institutions as the "rules of the game", whether formal or informal (North 1990:3). Institutions reduce uncertainty by providing structure to everyday life (ibid.). This is distinct from the everyday use of the term "institutions", which many people use to refer to organizations like the World Bank or financial service providers. We make a distinction between organizations and institutions, though both provide a structure to human interaction. North (1990) explains the distinction as being akin to the difference between the rules of a game and its players. Rules define the parameters of the game and how it is played – they are the institution. But the objective of a team within the set of rules is to win the game drawing on all resources available (skills, strategy, coordination). The team here – the group of people bound together by a common purpose to achieve objectives – is an organization. So the World Bank is an example of an organization, and marriage is an example of an institution with a set of rules or expectations governing the people involved.

So, coming back to the poor performance of agriculture in sub-Saharan Africa, we can add the institutional challenge to the technological and research constraints mentioned above. Agricultural research has focused strongly on a few limited areas: breeding new varieties, improving cultivation systems, processing and marketing, sometimes the interactions between food and cash crops, and occasionally on peasant system innovations. All these aim to improve production or processing techniques (AFD et al. 2013:147). Hounkonnou et al. (2012) suggest, however, that technologies are not the main bottleneck for improving rural farmers' livelihood; rather, institutional constraints limit farmers and other beneficiaries from putting technologies to use and improving livelihoods. Institutional constraints may lie in laws, customs, accepted practices and beliefs. When we talk about institutional innovation, we mean changes in these laws, customs, beliefs and ways of doing things – changing the so-called "rules of the game" to make smallholder agriculture work better and to make it possible for smallholder farmers to glean more sustainable livelihoods.

This broader approach to research, extension and development involves creating conditions and systems to support and foster technical, organizational and institutional innovation. A recent report (July 2013) by three development organizations identifies the following elements as critical for fostering innovation: involving producers in innovation design; close interaction amongst a wide range of stakeholders, conducive economic and social environments in rural communities and regions, farmers understanding and accepting the risks associated with innovations proposed, and pragmatism – that is to say, favouring technologies that are inexpensive to mobilize and accessible (AFD et al. 2013:150). These useful conditions will come back as we enter the discussion on innovation platforms as a mechanism for fostering rural innovation later in this chapter and in Chapter 2.

Policies promoting innovation In West and Central Africa, several regional policies are important to bear in mind when it comes to agricultural development opportunities and the (potentially) enabling environment for innovation. The strategic policy orientation of the Comprehensive Africa Agriculture Development Programme,[1] for example, resulted in new ways to organize the delivery of agricultural services using a multi-stakeholder approach. This strategic framework (CAADP), along with the Framework for African Agricultural Productivity,[2] calls for the engagement of a broad base of stakeholders in agricultural research and development in partnership with other actors working on rural infrastructure and access to markets, land and water, capacity strengthening and information, communication technology, amongst others. This shift from the research–extension–farmers trinity towards a more multi-stakeholder approach is significant.

To respond to the aspirations of these frameworks, an approach called "integrated agricultural research for development", or IAR4D, has been adopted by the continent-wide Forum for Agricultural Research in Africa and its sub-regional research organizations, including the Council for Agricultural Research and Development in West and Central Africa (CORAF/WECARD)[3] and its constituent national agricultural research systems. IAR4D is a set of principles that inform:

- Perspectives, knowledge and actions of stakeholders around a common objective
- Learning through collective action or working together
- Analysis, action and change across the economic, social, environmental, livelihoods and welfare of end users and consumers
- Analysis, action and change at different levels of spatial, economic, and social organization.

The IAR4D approach strives to support research for development that is undertaken within the context of innovation systems thinking. The principles are put into practice through innovation platforms in value chains, food systems and the management of natural resources. They constitute part of an enabling

1 CAADP: www.nepad-caadp.net
2 FAAP: www.fara-africa.org/media/uploads/File/FARA%20Publications/FAAP_English.pdf
3 CORAF/WECARD: www.coraf.org

environment for innovation that includes the removal of institutional and policy barriers (Meridian Institute 2013:5).

The Consultative Group on International Agricultural Research (CGIAR), which coordinates a network of international research centres around the world, also contributes significantly to research and development and the delivery of "global public goods". However, the linkages between the CGIAR's international institutes and the national agricultural research and extension systems need to be strengthened, according to a recent Bill and Melinda Gates Foundation report, if they are to be locally relevant (Meridian Institute 2013:9). In fact, several African researchers in this report described a veritable research "caste system", in which the international centres took a dominant position and controlled the funding and project support, while the national agricultural research systems were simply viewed as a "box to check" (Meridian Institute 2013:10). This is also a piece in the innovation system puzzle in terms of the enabling (or disabling) environment, incentives and the degree to which research is grounded in local needs and realities.

An "innovation system" approach or perspective is described in Chapter 2 in some detail. Innovation systems thinking is indeed being used by a growing number of organizations and projects. Here are some examples.

- The recent "investment sourcebook" on agricultural innovation systems from the World Bank (World Bank 2012)[1]
- The agriculture science and technology innovations (ASTI) framework developed by the Royal Tropical Institute (KIT) and the Technical Centre for Agricultural and Rural Cooperation[2] (CTA), which has been used for case studies focusing on various agricultural commodities of importance to African, Caribbean and Pacific countries.
- The Convergence of Science–Strengthening Innovation Systems[3] programme, led by the University of Wageningen and three West African universities and supported by KIT, which has a strong focus on institutional innovation.
- The upcoming (2014) FAO "state of food and agriculture" report, which will focus on innovation for family farming.

We now turn to innovation platforms and the landscape of issues they address.

Innovation platforms

Contextual factors and trends In addition to the political frameworks mentioned above, other trends and contextual factors are important to bear in mind as we delve into innovation platforms and their functioning. The publication from the Bill and Melinda Gates Foundation referred to above (Meridian Institute 2013) was based on interviews with key thinkers and practitioners

1 http://tinyurl.com/bpce3y7
2 CTA: www.cta.int/en/
3 CoS-SIS: www.cos-sis.org

in the field of innovation systems. It teases out key trends that contextualize priority gaps for innovation platforms and smallholder farmers. These include obvious current concerns such as climate change, water scarcity and rural energy. But they also cover interesting "knots" where opportunities and challenges are tightly entwined.

One of these knots is urbanization in sub-Saharan Africa, which can be seen as both as an opportunity for new markets for smallholder farmer products, as well as a driver towards large-scale land acquisition which does not (yet) appear to be benefiting smallholders. Another contentious knot is trade and globalization, and the challenge for smallholders to work with intermediaries and supermarkets in order to engage in these markets. A third knot is the proliferation of information and communication technologies that allow two-way communication with smallholder farmers. Science and technology are generating ever more information, which is becoming more and more available – but the challenge is to sift through the mounds of information to sort out what is relevant or not, and how to apply it. Much work is required to make them fit the smallholder reality (Meridian Institute 2013). These are some of the factors playing in the background as we delve into the specifics of enabling innovation in the cassava and maize sectors.

Perhaps the most remarkable trends identified by the Meridian Institute report are the changes in farmer demographics and the rural brain drain, dietary changes and their impact on food and nutrition security, and increasingly diverse national agricultural and food systems (Meridian Institute 2013). The first of these points underlines the fact that the "who" of farming is changing and assumptions as to the category of person farming need to be challenged. This relates particularly to inclusion (Chapter 9). The second point on food and nutrition security and dietary changes matters as we look at food crops that are not native to the region where they are being grown and consumed.

This last is particularly important for this book: an increasingly complex set of actors – government, private sector and NGO – are involved in agriculture and food systems through both longer term and more ad-hoc kinds of engagement. As national agricultural research and extension systems become more diverse and based on multiple stakeholders, they also become more complex. As many national government departments are under-funded and unable to reach farmers, other organizations have stepped in to fill in the gaps. These organizations include local and international NGOs, international businesses, donors and farmers' organizations. This diversity creates a complex landscape of organizations – sometimes playing by ad-hoc roles (Meridian Institute 2013:4).

Why do we focus on trends? Innovation platforms are not closed, self-referential systems. By contrast, they are responsive and must develop in close reference to the context in which they are embedded. This is what Maturana refers to as "allo-referred" (Maturana & Varela 1980:xiii). The context is diverse, complex, changing and multi-stakeholder. These trends, collectively, are a backdrop against which we examine innovation platforms in cassava and maize in West and Central Africa. But before we get ahead of ourselves, let us start with some definitions.

What is an innovation platform? Nederlof et al. (2011) refer to an innovation platform as "a diversity of interdependent actors who jointly attempt

to positively change the way they operate by trying out new practices." An ILRI policy brief on capacity to innovate (Homann-Kee Tui et al. 2013) states that an innovation platform is: "a group of individuals (who often represent organizations) with different backgrounds and interests: farmers, traders, food processors, researchers, government officials, etc. The platform actors come together to diagnose problems, identify opportunities, and find ways to achieve their goals. They may design and implement activities as a platform, or individually…" An earlier ILRI publication has a more concise definition: "Innovation platforms are equitable, dynamic spaces designed to bring heterogeneous actors together to exchange knowledge and take action to solve a common problem" (ILRI 2012 cited in Cadhilon 2013). CORAF/WECARD (2011, 2012) defines an innovation platform as: "comprising of stakeholders and/or collaborators of diverse social and economic actors and the institutions that govern their behaviour, all working towards a common objective. The platform adopts innovation as a systemic and dynamic institutional and/or social learning process and recognizes that innovation can emerge from many sources, complex interactions, and knowledge flows."

What do these definitions have in common? A range of actors come together to learn from each other, and to identify and solve problems. In agricultural sectors, the actors may be farmers, traders, input suppliers, service providers, processors, wholesalers, retailers, local and national government officials, researchers, NGOs and banks, amongst others. They agree to come together to solve problems they face in production and marketing a crop, either in one particular area or nationwide. They meet periodically to discuss issues and agree on what to do. The individual stakeholders then go away to implement what has been decided. After some time they come back together again to review progress and decide on the next steps.

Characteristics A number of key characteristics are essential for a stakeholder interaction mechanism to be considered an innovation platform. These include:

- **Different types of actors,** with different views, interests and experiences collaborate through joint action and reflection.
- The collaborating actors are **bound** to each other; they are interdependent.
- The glue binding these actors together is a **common, often complex, problem**, opportunity or idea.
- One of the intentions of the platform is to **experiment** with new ways of operating in order to solve this problem or take advantage of this opportunity.
- Joint reflection by actors on experiments and new ways of working, in order to support adaptation and learning, is a critical element of innovation within a platform.

Innovation platforms are mechanisms to organize interaction with different stakeholders in the agricultural innovation system (Nederlof et al. 2011). Multi-stakeholder innovation platforms have become common tools in agricultural development and research projects and programmes, but their use differs from project to project. The common expectation is that they link stakeholders,

strengthen farmer organizations, increase the adoption of technologies, and speed up dissemination of research results ("scaling out").

Innovation platforms in value chains and food systems have various names, including research for development (R4D) platforms, innovation clusters, concertation and innovation groups[1] (Nederlof & Pyburn 2012), innovation networks (c.f. Klerkx et al. 2010), and agri-business clusters (International Fertilizer Development Center[2]). What is common is that innovation platforms are acting as a countervailing force against what the Convergence of Science programme refers to as the pervasive bias against smallholder farmers and smallholder agriculture (Huis & de Steenhuisjen Piters 2012:vi). They give voice to small farmers and give them access to actors further along the chain. This access, recognition and invitation to participate in decision-making and strategizing beyond the farm level equips smallholder farmers to work to change the systems in which they engage. Other actors further along the chain can become comrades-in-arms or allies to the smallholder farmers, thus shifting the status quo and shaking the existing bias.

Learning Learning is an integral component of an innovation platform. Platforms act as forums for interaction and relationship building among diverse social and economic actors. Together these actors diagnose problems, explore opportunities and investigate solutions: they innovate collectively through learning-by-doing. But competencies and skills cannot be taken for granted and are a pre-requisite for effective co-learning. Capacity strengthening can target target individual, organizational, institutional and systems levels and can be directed towards both technical competence and skills enhancement. It can also address management, the facilitation of experiential learning or the sharing of best practices. Capacity enhancement gives actors the skills to be able to innovate in their domain of engagement to improve livelihoods and household welfare.

Facilitation Innovation platforms rarely emerge or evolve without some form of external intervention; to organize stakeholders and bring them together, facilitative action is required. In the literature, reference is often made to facilitation or brokering (e.g., Klerkx & Gildemacher 2012, Nederlof et al. 2011). Facilitators or innovation brokers play an important role in the start-up and the life-cycle of an innovation platform: they act as catalysts for stakeholder interaction (Nederlof et al. 2011). Klerkx & Gildemacher refer to an innovation broker as a person or an organization that aims to enhance innovation by bringing stakeholders together, and by facilitating their interaction.

Facilitators need a wide range of skills and expertise. (e.g., Klerkx & Gildemacher 2012, Nederlof et al. 2011). Roles can be taken up by an individual, an organization, or a number of individuals from different backgrounds. Facilitating innovation typically comprises the following functions (Klerkx & Gildemacher 2012): analysing the context and articulating demand; composing networks; and, the facilitation of joint multi-stakeholder action for agricultural innovation. Finding skilled and capable facilitators who have the clout in a particular sector to instigate change and bring stakeholders together can indeed

1 A term used in the Convergence of Science–Strengthening Innovation Systems (CoS-SIS) programme, www.cos-sis.org

2 www.ifdc.org

be a challenge. Sometimes these facilitators are embedded within a government ministry, other times in a non-governmental organization or research institute or extension service provider.

Levels Innovation platforms can work at different levels. At a local level, they tend to focus on bringing together farmers, value chain actors, and researchers. At higher (district, national) levels, such platforms are often used to bring actors together to work towards policy changes. Innovation platforms are increasingly relevant as governments and donors are finally beginning to recognize the important roles of the private sector and civil society in agricultural development and in achieving food security (World Bank 2008). But even when platform is set up purely to address food security or the management of natural resources, a market focus can act as a catalyst for active stakeholder participation.

Functions What does an innovation platform do? We can group its functions into the following categories:

- **Needs/demand articulation** for services, including research.
- **Identification of new opportunities** for change.
- **Pilot innovation processes** Experimenting and adaptation of practices, which may reflect technological, economic, organizational and institutional changes, or combinations.
- **Feedback** When innovation and scaling out takes place, new insights and opportunities for innovation will emerge.

However, the boundaries between these functions are often not clear-cut. Sometimes articulating demand is the same thing as identifying a new opportunity. What is most important is that an innovation platform is a hub for exchange of ideas, collective learning and joint activities that lead to changes and improvements in the sector.

Innovation platforms addressing institutional innovation. Earlier in this chapter, we introduced the concept of institutions and institutional innovation. We stressed the importance of moving beyond a limited technical focus or only technological innovation. An example of the limits of a technological focus for innovation is that of contracts for agricultural sales/purchases, which remain limited in Africa. The World Bank estimates less than 5% of farms in Africa have such contracts despite them being seen as of the most efficient means to stabilize transactions between supply chain actors (AFD et al. 2013:151). However, in informal (e.g., village or rural) contexts, the notion of a contract and the obligations entailed are haphazard, at best. Contracting requires what the authors refer to as an "institutional leap" that brings together the interests of buyers and sellers (ibid.). No technological innovation will bridge this gap: it requires institutional change (see the definition of institutions above). This presents a ripe opportunity for innovation platforms where multiple stakeholders are brought together to address shared concerns. Innovation platforms can create an "enabling environment" for contracts, in which all relevant stakeholders are present, interacting and building trust-based relationships. This is an institutional innovation. The dynamics of innovation platforms in relation to institutions is taken up in Chapter 8. They create a social accountability system for all actors in the system.

DONATA

Dissemination of New Agricultural Technologies in Africa (DONATA) is an initiative of the African Union under its New Partnership for Africa's Development. It is coordinated by the Forum for Agricultural Research in Africa (FARA), an Africa-wide organization that oversees the activities of regional research associations, which in turn facilitate the work of national agricultural research systems. DONATA serves three regions: West and Central Africa, Eastern Africa, and Southern Africa. It is funded by the African Development Bank. In West and Central Africa, DONATA is coordinated by CORAF/WECARD. This regional organization, based in Dakar, Senegal, brings together the national agricultural research systems of 22 countries.

The DONATA focus crops were selected in 2007 at a consultation workshop of researchers, agribusinesses, farmers, extension agencies and development organizations. All three regions initially chose rice as one of their crops, but the donor was already supporting major projects on rice in several countries, and wanted to learn from their work before investing further in this crop. After some discussion, all three regions chose to focus on maize plus one other crop: cassava in West and Central Africa, orange-fleshed sweet potatoes in East Africa, and sorghum in Southern Africa.

DONATA in West and Central Africa

In 2007, CORAF/WECARD began work with seven countries (Burkina Faso, Cameroon, Republic of Congo, Côte d'Ivoire, Mali, Senegal and Sierra Leone), and expanded to another seven countries in 2011 (the Republic of Benin, Chad, The Gambia, Ghana, Guinea, Liberia and Togo). Broadly speaking, DONATA operates at three levels: regional inter-country coordination, within-country coordination, and individual innovation platforms.

Regional inter-country coordination The manager of the Knowledge Management and Capacity Strengthening Programme at CORAF/WECARD is responsible for the DONATA initiative across the 14 countries involved. This includes a range of tasks: coaching and mentoring staff in each country to understand the innovation platforms approach and put it into practice, running training courses and cross-country learning visits to share experiences, and handling financial and logistical tasks.

DONATA benefits from close ties with another FARA initiative, the Regional Agricultural Information and Learning System (RAILS, www.erails.net). RAILS and DONATA are components 1 and 2 respectively of the Promotion of Science and Technology for Agricultural Development in Africa (PSTAD) project. DONATA activities are publicized via the internet (www.fara-africa.org/our-projects/donata), a range of CORAF/WECARD publications and the CORAF/WECARD website (www.coraf.org), as well as via the mass media.

Within-country coordination Within each country, one person, based at the national agricultural research institute, is designated as that country's focal point. He or she coordinates DONATA activities within the country, helps establish local and national innovation platforms, trains and guides the facilitators of the individual innovation platforms, and arranges cross-visits

and other activities so the stakeholders in the various platforms can learn from one another.

The focal points coordinate a team drawn from among their colleagues in the research institutes and from other organizations, who provide a range of skills and services to the innovation platforms. These services include the supply of planting materials (seed of improved maize varieties, disease-resistant cuttings of cassava), training and advice on improved production and processing technologies, linkages with other organizations (e.g., for marketing and credit), lobbying of government, organization and facilitation of platforms, troubleshooting and technical backstopping. The team members work part-time with DONATA; they also have their other research and development duties unrelated to the initiative's activities.

Individual innovation platforms. Each country has between 5 and 17 innovation platforms. Most of these are at the local level, and bring together a number of stakeholders (or "actors") in the commodity system: farmers, processors and traders, as well as research and extension staff. These platforms are facilitated by researchers, extension workers or staff of non-government organizations. Several countries have established innovation platforms at a regional or national level to deal with issues such as policy and marketing that are best dealt with at a higher level.

Entry points

The entry point is the first priority that the platform will address; it is a place to start. It may be a technology (such as a disease-resistant variety), an improved practice (such as better marketing channels) or an improved process (e.g., stakeholder inputs to policy). It may cover different kinds of value chain activities (crop production, processing or marketing) or policy issues. It may be based on an existing constraint (such as cassava mosaic virus) or an associated opportunity (a resistant variety).

The national agricultural research institutes in each country defined one or more entry points for the innovation platforms based on interaction and discussion with stakeholders as to their pressing needs. The stakeholders invited to participate in the innovation platform depends on the entry point. A platform dealing with seed production, for example, typically includes farmers, input dealers, research and extension. One dealing with marketing is likely to involve traders, transporters and processors. The entry point(s) identified with stakeholders at the start of the DONATA were addressed over time in Burkina Faso, The Gambia, and Sierra Leone so that these innovation platforms evolved to address other issues. This is in contrast to Mali and the Republic of Congo, which largely remained working on the initial entry points.

Innovation platforms in DONATA

DONATA aims to scale up (institutionalize or mainstream) and scale out (replicate) new and existing agricultural technologies and practices for people who needed them but could not get them. The initiative uses the term "innovation

platform for technology adoption" to capture this nuance. It supports a specific kind of innovation platform – one that focuses on the transfer of technology. The innovation platforms were intended as participatory approaches for technology dissemination. Incentives at community or national level were considered necessary to entice active participation. However, the cases in this book demonstrate a shift from an initial focus on technology adoption towards a more multi-stakeholder process approach where the initiative embraced a broader understanding of innovation platforms, beyond just technology dissemination.

As with all development initiatives, DONATA has experienced some hiccups along the way. There have been all of the usual difficulties in coordinating and implementing a complex initiative across many countries. This book aims to describe these hiccups, along with the many successes.

About this book

This book is written first and foremost for stakeholders in the 22 national agricultural research systems that are members of CORAF/WECARD. A clear intention is that the learning and experience of the 14 country partners in DONATA be shared amongst others in the region. We think that the vast experience – both successes and challenges – can inform people in other countries and other agricultural sectors in West and Central Africa. The six cases documented in this book, alongside the analysis and additional understanding drawn from the literature on agricultural innovation and innovation platforms, offer some refreshing insights for consideration.

That said, the book is relevant for others also. Academics and researchers working on issues related to the development of African agricultural sectors will find the field experience interesting and revealing. Policymakers who are keen to put institutions in place to promote the agricultural sector may be inspired by the opportunities that innovation platforms offer. And young professionals working (or intending to work) in agriculture in West and Central Africa will also find the content useful. The book is also being translated into French so that practitioners from francophone countries can read it more easily.

For a detailed description of the methodology and the guiding concepts informing the book, see the final section of Chapter 2.

How to read this book

Chapter 2, Making sense of practice, presents a conceptual framework for the book, and explains the methodology used in the field work and in drawing out the data and stories. It introduces guiding concepts – complex systems, soft systems thinking, value chain development, resilience, agency and structure, agricultural innovation as a multi-stakeholder processes, and emergent properties. These concepts are important for our analysis of DONATA field experiences; they put them into the context of agricultural innovation systems thinking and practice beyond just this single initiative.

The second part of the chapter links the concepts and guiding questions to the thematic chapters of the book. We address several important conceptual questions that the book will explore related to the following topics:

- Role of research organizations in agricultural sector development.
- Facilitating innovation platforms from a research organization vantage point.
- Technology dissemination as a starting point and the implications for institutional versus technological innovation.
- Added value of cross-country learning.
- Importance of gender, diversity and inclusion in building robust institutions.
- Policy dynamics and building sustainable capacity to innovate.
- Emergent properties that can be generated by bringing stakeholders together.

The final part of the chapter reviews the methods and processes used in gathering data and writing this book.

Moving forward from the introduction and the conceptual framework, we then get to the "meat and potatoes" of the book – the cases (Part 1), innovation platform processes (Part 2) and some key themes (Part 3) that are at the heart of the whole initiative. A reader interested in a particular theme can both read the thematic chapter as well as look in the cases that cover that theme (see Table 2.1 in Chapter 2). A reader interested in a particular country or crop (cassava or maize) may want to start there.

Part 1 presents six country cases across two chapters: Chapter 3 on maize innovation platforms, and Chapter 4 on cassava innovation platforms. Each case provides a background to the innovation platforms in a particular country and describes how they developed. It also illustrates the successes and challenges of the innovation platforms, drawing on interviews with stakeholders and sharing their stories around the key themes of the book. The cases include a map marked with the locations for DONATA innovation platforms in the country, a list of platform actors in the country, a visual illustration of the innovation platform's development, and data boxes including the number of beneficiaries, yields and other production and income figures, where relevant. The following paragraphs give a taste as to what is in the cases.

Chapter 3 focuses on maize innovation platforms. It begins with a brief overview about the crop, looks at its history and its current role in food security in Africa. It provides some agronomic and nutritional details as well as information on overarching policy and research agendas.

Chapter 3.1: Burkina Faso The Burkina Faso case is about 13 local innovation platforms on maize production as well as provincial marketing and provincial processing innovation platforms. The case illustrates the benefits of farmer participation in a platform. It traces the technology-based origins of the platforms in Burkina Faso and the role of the national research organization in getting existing technologies "off the shelf" and into use. It neatly captures the spread and replication of innovation platforms as a tool for multi-stakeholder participation. It explains how the organizers even managed to engage policymakers, and how the platform's activities are communicated to wider

audiences. Finally, the case offers interesting experience on how to influence policy and get political buy-in: innovation platforms are now supported by the Minister of Scientific Research and Innovation in Burkina Faso for agricultural development beyond just the maize sector. This political influence was done via existing platforms, rather than through a specific policy platform as we see later in the Gambian case.

Chapter 3.2: Mali The Mali case has as a starting point the almost universal challenge of agricultural research organizations: good new varieties have been developed, but farmers are not using them. In Mali, ten innovation platforms have been put in place across Mali's "maize belt". Three focus on grain production and marketing, and seven on certified maize seed production and marketing. The Mali innovation platforms have been very successful in helping the stakeholders in the sector get to know and trust one another and in creating a sense of mutual benefit for participation, regardless of the category of stakeholder – farmers, researchers, seed cooperatives, policymakers, the seed company, and so on. Communicating information about new technologies has been an important contribution of the platforms. They have used a diverse array of channels to get their message out to both platform actors and to the community at large.

Chapter 3.3: The Gambia In The Gambia, seven innovation platforms for maize were set up, starting in 2011. Six focus on production, while one that was launched in 2013 acts as a regional policy platform. This case describes the start-up process; it explains how different stakeholder groups were introduced to a new concept and way of working. Training and capacity building have been a centrepiece of the production and marketing platforms, both to introduce new technologies and to build on traditional practices. The benefits in terms of increased yields are already apparent. An insightful aspect of this case is the development of a higher-level regional policy platform, which is unique amongst the cases in the book. The policy platform has been successful in influencing national government policy and aligning issues that are also part of the government's agricultural agenda. As a result, the "DONATA approach" is being taken up by other projects in the country. The Gambian case is also an example of how to ensure a sound future for the innovation platforms by dealing with sustainability with vigour.

Chapter 4 turns to cassava innovation platforms. It kicks off with a brief introduction to the crop, its history and roles in African food security. It also describes the wide variety of processed products made from cassava, and highlights the fact that this is largely a "woman's crop" in West and Central Africa. It then presents three cases: Sierra Leone, Republic of Congo and Cameroon.

Chapter 4.1: Sierra Leone This case describes ten innovation platforms set up across three regions within post-conflict Sierra Leone since 2008. The platforms have had to face head-on the challenge of cassava multiplication as well as dealing with pest and diseases that attack cassava. The case describes the set-up and functioning of the innovation platforms and how their focus shifted from production towards marketing and processing. This case describes the different kinds of processing and the range of products that cassava can be transformed into. A fascinating and unique aspect is that one processing plant has taken up social inclusion: polio victims are working as blacksmiths,

amputees as agro-dealers and blind people as marketers. Both men and women produce, process and sell cassava. This case illustrates what a company can do to create productive work for more vulnerable members of a community. The case also takes up the challenge of sustainability and illustrates the two-way dynamic between an innovation platform influencing policy and being influenced by policies.

Chapter 4.2: Republic of Congo The Republic of Congo[1] case is about five cassava innovation platforms put in place starting in 2008. Three of these platforms deal with production, and two with processing. The case describes how platform actors faced the challenge of cassava mosaic disease by developing and disseminating resistant clones to farmers, who were at first reluctant to accept them. Both producers and processors are represented in the platforms, though farmers are by far the largest group. A striking story in this case relates to food security: a group of 33 women work together to sell *mbala-pinda* – a nutritious and tasty cassava-peanut snack.

Chapter 4.3: Cameroon The innovation platforms in Cameroon at first got off on the wrong foot, but they took root properly and with renewed enthusiasm and direction in 2012 with the appointment of a new focal point. Since then, ten cassava innovation platforms have been put in place, addressing production, processing and marketing. As the innovation platforms have been set up quite recently, the case focuses on the start-up process and the goal of increasing the quality and quantity of products. In Cameroon, women do most of the cultivation, processing and selling: in fact, three-quarters of the platform actors are women. That means the Cameroon case holds promise to uncover some interesting gender dynamics. Finally, the case also sheds light on an unusual system for facilitation, which may be relevant for other innovation platforms starting up in the region.

Part 2 is all about the processes involved in the life of an innovation platform. It covers start-up and composition, facilitating stakeholder interaction, and sustainability. We are not the first to write about these topics. However, we aim to draw out learning on these key process issues and to glean some new insights from the DONATA regional experience with innovation platforms for root and grain food security crops.

Chapter 5: Getting started All processes begin somewhere. **Chapter 5** addresses the question of how to start an innovation platform, who to include and what is needed to get things moving. The start-up process varied considerably across the DONATA innovation platforms. This chapter explores the strategies employed by the national focal points and their teams in launching the platforms. It describes how they made decisions on inclusion and exclusion, and draws lessons that future programmes might consider as they initiate innovation platforms in other countries or other sectors.

Chapter 6: Facilitating stakeholder interaction is about the nitty-gritty of how people engage, interact and communicate, and how a facilitator can guide, shape and understand that dynamic process. It draws from the six country cases and the literature to learn how to get people talking and learning together.

1 Throughout this book, we refer to "Republic of Congo", which is sometimes called "Congo-Brazzaville". This is not to be confused with the neighbouring "Democratic Republic of Congo" (DRC), also known as "Congo-Kinshasa" or formerly as Zaire.

This chapter also draws on field exercises led by the KIT-CORAF/WECARD team that were undertaken with representatives from innovation platforms in each country. We present "septagrams" – the outputs of a "rapid appraisal of agricultural knowledge systems" (RAAKS) tool (Engel & Solomon 1997) – that provide insights into how platforms perceive the relative importance of different stakeholder groups.

Chapter 7: Sustainability In any project or time-bound process, the question of sustainability is bound to arise. Chapter 7 takes up this topic. We consider two dimensions of sustainability: the sustainability of the platform itself, and the sustainability of the stakeholders' capacity to innovate. This chapter discusses when to continue and when to just let a process come to an end. It then takes up the issue of incentives to participate: how can people be motivated to continue engaging in a platform once the funding dries up? And related to this, how can financing and other resources be secured beyond the parameters of the specific initiative? The role of governments comes in here: if innovation is conceptualized as a "public good", who apart from the government takes the lead initiating and facilitating the innovation platform after the project cycle is complete?

Part 3 With cases and innovation platform processes discussed in the two earlier parts of the book, Part 3 goes into more depth on three themes: influencing and the influence of policy, gender equity and inclusion, and knowledge sharing.

Chapter 8: Policy pathways begins by exploring the relationship between policies and the functioning of an innovation platform, as well as the influence an innovation platform can have on policy change. The Gambia, Burkina Faso and Sierra Leone cases in particular provide examples of institutional change emerging in West Africa, and give us a glimpse into how this is happening. Strategies for engaging policymakers at different levels are illustrated through examples from the cases.

Chapter 9: Gender-equity and inclusion turns to a major challenge in agricultural innovation systems; gender issues and the inclusion of more vulnerable societal groups. Where are women vis-à-vis men in productive activities, in meetings, in innovation platforms, in research and extension organizations? Which categories of men and which women are active in an innovation platform: rich and poor, old and young, different ethnic groups and so on? What about physically challenged community members: how can they not be left aside? Gender is a recognized oversight in agricultural innovation systems thinking, particularly in research and extension; this is true also of innovation platforms. This chapter draws together evidence from the field and insights from the literature to get gender and inclusion more firmly on the innovation systems agenda. It looks at what is happening and what has been missed by DONATA's innovation platforms, and how future projects can create more robust agricultural sectors.

Chapter 10: Knowledge and information sharing It explores communication with external stakeholders such as community members and people not involved in the innovation platforms. It then looks at knowledge sharing between platforms at different locations within a country. It also looks at the cross-country learning that took place between partners in DONATA. This

chapter feeds an argument for investment in the regional cross-pollination of ideas, experiences and insights. This chapter describes the important role that knowledge and information sharing plays in an innovation platform's success and how it contributes to learning. Finally, the chapter uncovers some challenges of data collection for the monitoring and evaluation of innovation platform impacts and processes, providing pointers for future initiatives of this nature.

Chapter 11: Practical and conceptual conclusions for reflective practitioners returns to the analytical framework to explore how the guiding concepts have played out in the thematic chapters and cases. We look at what can be learned from the DONATA innovation platforms experiences in terms of sharing with agricultural research and extension systems in West and Central Africa. We reflect on what should be repeated, as well as what is better left aside. But the conclusions are not about this one initiative. This chapter considers innovation platforms more broadly. It connects the discussion in the literature to what we found in practice, drawing insights for each theme. Finally, we present some closing thoughts on innovation platforms for food crops, food-security assurance and the role of national agricultural research institutes in this.

Voices of innovation platform actors

People are the heart and soul of agricultural development. The people participating in the innovation platforms all have fascinating stories and experiences to tell. Each one has his or her own story about how they got involved with an innovation platform and how a platform works for them – the benefits and challenges.

Throughout this book, you will see links to YouTube, along with icons that look like the one on the right. Each one links to a short film. In the online version of this book, just click and you will hear voices from the field. If you have the printed text, scan the icon with your smartphone (you will need an application called a "QR reader" or "QR scanner" on your smartphone to do so[1]), and the film will appear on your phone. Enjoy hearing about the real-life experiences from people in the field, in their own words.

goo.gl/Tk4LjX

There are 30 films throughout the text, with subtitles in English where another language is spoken. See the full list of films at the end of the book, which also contains the links and the names of the people interviewed.

Key

Throughout this book you will see symbols in the margins (Figure 1.1) to indicate when key themes or concepts are being used. An introduction to these themes and concepts can be found in Chapter 2.

1 Many QR scanner/reader applications are available online either at no cost or for a few euros. Check what the app store in your region offers.

Figure 1.1 Key to marginal symbols used in this book

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2 MAKING SENSE OF PRACTICE

Previous page: Farmers in Burkina Faso using a "septagram" to reflect on their influence in the DONATA innovation platform, February 2013.

Photo: Geneviève Audet-Bélanger

2 MAKING SENSE OF PRACTICE

Rhiannon Pyburn and Remco Mur

This book is more than a project document or promotional flyer. It takes up serious conceptual lacunas and, using real-life experiences from across six West and Central African countries. It reflects on and contributes to ongoing discourse in the field of agricultural innovation systems. This chapter sets the framework for analysing the cases in the rest of the book.

The first section contextualizes agricultural innovation platforms in the social scientific discourse. It begins by making explicit the conceptual frames that inform our analysis: complex systems and soft systems thinking, multi-stakeholder processes and how agricultural innovation platforms fit into that landscape. Key concepts are introduced that sculpt and guide our analysis, namely: structure and agency, resilience and emergent properties. It links to social science literature and current discussions on innovation platforms and agricultural innovation systems.

The second section brings these concepts together and grounds them in the DONATA story. We flesh out the concepts in relation to themes and enigmatic issues that the action-research examined. We describe the overarching questions that guide our explorations throughout the thematic chapters of the book. We return to these questions in the concluding chapter, drawing from the empirical experiences.

The final section describes the process and methodology used to produce this book. It describes the action-research that KIT undertook with CORAF/WECARD and DONATA partners in February–July 2013, including an pre-writeshop held in Burkina Faso to determine the themes, field work in six countries, a writeshop in The Gambia to write the cases and analyse experiences, and the work afterwards to finalize this book.

Conceptual frames

Our conceptual framework is based on the idea that agricultural research for development and innovation needs to address systemic constraints, shared by multiple actors operating in complex settings with many competing forces at work (**complex systems**). This requires a **multi-stakeholder process** where there is space for the diverse views of the different actors to come together around a shared opportunity or constraint. This can lead to concerted action on concrete issues, and sometimes to unexpected outcomes (**emergent properties**) where the whole proves to be more than the sum of its parts.

Innovation platforms can be seen as such a space, providing **structure** to individual actors and their organizations to exert **agency** to bring about change in the system, addressing systemic constraints and building **resilience** of the individuals, their organizations and the system as a whole to adapt to changes in a complex environment. Below we introduce these key concepts.

Complex systems

Systems thinking is an approach to probing and dealing with the complex situations that actors face in the agricultural sector – looking at the whole and making links between the various parts. Systems are defined as "relationships and linkages among elements within arbitrary boundaries for discourse about complex phenomena to emphasize wholeness, interrelationships and emergent properties" (Röling 1992). **Soft systems** thinking is an approach to studying reality and intervening in it that focuses on social interaction and the human aspects of a system (Engel 1995, Hounkonnou 2001). Soft systems approaches become useful where "reductionist approaches are not able to cope with the problems of the real world which is composed of coherently organized entities which cannot properly be reduced to an aggregate of their components" (Hounkonnou 2001).

People are at the heart of soft systems. As such, contemporary approaches to agricultural innovation are increasingly rooted in soft systems thinking. The focus on actors, their perspectives, their intentions, and their interrelationships within the wider context makes it a useful approach for dealing with the complexity in which smallholder producers in sub-Saharan Africa operate. The new perspectives that emerge through focusing on actors and using a soft systems approach, challenge predominant reductionist, linear, transfer of technology approaches (see Chapter 1 for the development of thinking on agricultural extension and research).

Value chain development has been a key concept in bridging and building understanding among the diverse groups of actors involved in the DONATA maize and cassava innovation platforms. The idea of value chains meshes well with the concept of an agricultural innovation system though the roots of agricultural innovation systems lie in research, whereas value chain development has its roots in product marketing. Most of the actors are the same, though the vocabulary may be different. Value chains have a product and market focus tied to the idea of adding value through the chain. An agricultural innovation approach instead focuses on realizing new and better ways of producing, processing and marketing as well as systemic change. As value chains are often referred to in this book, Box 2.1 describes them based on a broad foundation of work undertaken by the Royal Tropical Institute on the topic.

Figure 2.1 illustrates a value chain for a particular commodity but also captures some of the key components of an agricultural innovation system. The central line is the **value chain actors** – the farmers, processors, traders, wholesalers, retailers and consumers who get a product from field to fork. Surrounding the value chain actors are the **value chain supporters**: the extension service providers, financial and health service providers, non-governmental

Box 2.1 Value chain development

Value chain development is a key concept in strategies to reduce rural poverty in developing countries. The basic idea is that value chains offer the farmer (and indeed all chain actors) the possibility to acquire new knowledge from actors elsewhere in the value chain (e.g., buyers, importers, certification bodies) (Humphrey & Schmitz 2000, Vargas 2001:5).

A **value chain** refers to an entire system of production, processing and marketing from inception to the finished product. It consists of a series of **chain actors**, linked together by flows of products, finance, information and services. At each stage of the chain, the value of the product goes up because the product becomes more available or attractive to the consumer – hence the term "value" chain. Costs also accumulate at each stage of the chain.

Alongside the main chain actors, other individuals and organizations are often involved: they surround the chain actors providing them with services. We call them **chain supporters**.

Chain actors and chain supporters operate within a **context** that includes the larger economy, currency exchange rates, government economic policy, as well as governance, tax and regulatory and legal frameworks This context may help the performance of the chain, for example, by promoting a transparent, stable macroeconomic policy. Or it may hinder it by imposing restrictions or allowing corruption to flourish (Quiros 2007, Shepard 2004, OECD 2006). The context may be influenced by advocacy movements (for example NGOs that work on environmental or social issues) or by social structures (for example traditional social hierarchies within a community) (KIT & IIRR 2010).

Excerpt from: Laven et al. 2012:5–6

organizations and so on that support the chain actors in getting that product through the chain. And finally we have the **chain context**: everything from climate to policies to fluctuating market prices for a particular commodity. In agricultural innovation systems discourse, we often refer to the context as the "enabling environment" – the interlinked support services, inputs, information, market access and policies, amongst others, that allow farmers (or other actors) to make decisions and mitigate risks in their planning, growing and harvesting practices (Meridian Institute 2013:123).

Adapting to complexity Smallholder producers in sub-Saharan Africa face the challenge of securing their livelihoods, ensuring food security, and remaining competitive by increasing their productivity in a sustainable way and taking advantage of emerging market opportunities. At the same time, they operate in an increasingly complex, uncertain and rapidly changing environment. Factors like climate change, uncertain and changing political and economic conditions, and rapid land-use shifts all impact on their day-to-day

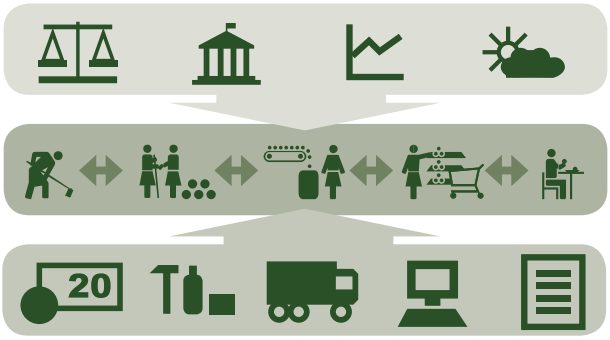

Figure 2.1 A value chain: Chain actors, supporters and context

Source: Laven et al. 2012 :5

lives. These changes pose context-specific challenges. The proliferation of actors, technologies and information available at local, regional, national and global food-system levels adds to the complexity (Meridian Institute 2013:5).

But smallholders are not lone actors in an agricultural innovation system: they are just one of many actors in the value chains where they operate. This complex landscape is also a challenge for other actors in a value chain: traders, agribusiness operators, etc. (Mur & Wongtschowski 2013, Nederlof et al. 2011:16, Rajalahti 2012:7). All value chain actors need to adapt to changing circumstances, i.e., to innovate and develop new ways of collaborating to generate knowledge and put it into use at the required pace (Daane 2009). The Steps Centre succinctly captures the challenge for the agricultural sector:

> *Responding to complexity and uncertainty are essential elements in sustainable agri-food systems, perhaps the riskiest sector in the economy, which are not only subject to the price volatility facing many sectors, but also highly dependent on nature and weather, leaving them vulnerable to droughts and floods, pests and diseases, and other shocks and stresses.*
>
> *Thompson et al. (2007:17)*

The complexity and uncertainty of agricultural innovation processes require new ways of management, where strategic thinking and stakeholder engagement are crucial. A systems perspective is essential. A systemic approach to agricultural innovation needs to be context-specific, actor-oriented and farmer-centric (Meridian Institute 2013:5). In addition, agricultural innovation in complex settings requires experimentation, learning and reflexivity. Snowden refers to these kinds of experimentation as "safe-fail"[1]: there is no harm in them failing as the initial experiments are small-scale and low-cost. Experimentation and the resulting innovations in complex systems need to go beyond a specific technological novelty, to relationships between actors and ways of doing things. And innovations are also needed in the context – the rules, policies, laws, behaviours and norms that shape the possibilities open to the actors involved.

Resilience

In physics, resilience refers to the property of a material that enables it to resume its original shape or position after being bent, stretched, or compressed. In a social system, resilience is the ability of the system to cope with and adapt to the consequences of shocks or changes. Ostrom (1990) refers to a resilient or robust institution as:

> *"an institution that is able to cope with external and internal troubles. Rules and the execution of these rules can be adjusted to changing circumstances without the institution sacrificing/jeopardizing its main functions or the objectives that it was set up to fulfil. In order to make an institution resilient, its regulation has to be easily adjustable*

1 Cognitive Edge website: http://cognitive-edge.com/library/methods/safe-to-fail-probes/

and the members of the institution need to be knowledgeable about change and how to adapt to it."

Dealing with complexity and risk requires resilience, adaptation and flexibility.

Little progress has been made in understanding surprises in agro-food systems and in helping these systems become more resilient to cope with uncertainty, shocks and stresses (Thompson et al. 2007:1). In vulnerable systems, small disturbances can have adverse social consequences; whereas when a system is resilient, disturbances have the potential to create new opportunities and innovation (Berkes et al. 2003, Gunderson & Holling 2002, Thompson et al. 2007:2). We need systems with space for unpredictability and surprise, as both are very likely in complex contexts. Indeed, uncertainty and surprises need to become an "essential part of an anticipated set of adaptive responses" (Thompson et al. 2007:5). We argue that innovation platforms can be a mechanism for dealing with uncertainty and can indeed be considered robust institutions when they are functioning well.

Diversity within negotiated boundaries The edges of any system – natural or otherwise – are most diverse. And in this diversity, the chances of having what is needed expand. Diversity lends itself to flexibility, which is an important aspect of resilience. But if a system is too diverse, common ground becomes impossible to find. If there are too much diversity and too little common ground, then the organism – an organization, a system or an innovation platform – loses its integrity. "Structural plasticity is the potential for structural change without disrupting the organization that defines the entity" (Woodhill & Röling 1998:62). Capacity to innovate is a component of a resilient system and robust institutions. It can be defined as "the ability to adjust to changing conditions, interact with diverse stakeholders, seize new opportunities and develop new skills" (Meridian Institute 2013:8). We take this up further in Chapter 7 on sustainability. But if "structural plasticity" has been exceeded, the ability to "bounce back" and retain form, is lost. Where and what are the boundaries of an innovation platform? Negotiating clear but flexible boundaries may be a part of the change and resilience puzzle for innovation platforms.

Internal management How and where boundaries lie depend largely upon the local circumstances, but Ostrom (1990) has distilled from a number of present day institutions the main characteristics of successful organizations that can be applied also to innovation platforms. Ostrom claims that "all efforts to organize collective action, whether by an external ruler, an entrepreneur, or a set of principals who wish to gain collective benefits, must address a common set of problems. These problems are coping with free-riding, solving commitment problems, arranging for the supply of new institutions, and monitoring individual compliance with sets of rules."[1]

We deal with most of these issues later in the book: in Chapter 5 on getting started, Chapter 8 on policy pathways, and Chapter 10 on knowledge and information sharing. Chapter 11, the conclusion, also comes back to the issue of resilience and the need for robust institutions.

1 See www.collective-action.info/debates-institutions-collective-action-general_resilient

Box 2.2 Agency and structure

Agency is "the capacity of an agent (an individual person or other entity) to act independently, to make their own free choices and to impose those choices on the world" (Pyburn & Laven 2012:41). An individual or group's ability to make effective choices and to transform those choices into desired outcomes (World Bank 2012:150).

Structure refers to the institutions that are in place: "institutions that either limit or create the opportunities available to individuals. Institutions can be formal or informal. Informal institutions include social class, values, religion, customs, ways of doing things (habits); while formal institutions refer to laws and regulations" (Pyburn & Laven 2012:41).

Agency and structure

Value chain development efforts promise new markets and opportunities to add value to products, but they are sometimes criticized as being too exclusive and leaving the poor behind. Inequalities are growing between rich and poor, as well as among different categories of poor people (young people, women, certain ethnic groups, etc.). The book *Challenging chains to change* (KIT et al. 2012) deals with the issue of gender equity in value chain development. It unpacks the "who" of value chain development by using the concepts of **structure** and **agency**. These concepts are useful also for the analysis of innovation platforms. These terms are widely used in sociology and gender studies (c.f. Giddens 1984, Kabeer 1999) to describe two forces that affect the opportunities or possibilities open to different members of society to make changes to their life situation.

When it comes to rural areas and agricultural value chains, the wide array of stakeholders with differing assets, interests and stakes makes for a very complex and dynamic setting (Thompson et al. 2007:15). Different actors have different levels of agency, though sometimes it may remain untapped: that is to say, unused. Further, institutions (the structure) promote or constrain the interests and opportunities of different actors unevenly (Thompson et al. 2007:15).

But not only do structure and agency both impact on the opportunities and constraints of various actors, they also affect one another. Structure and agency affect one another and interact in a dynamic way: when both shift positively there is a more profound impact than the potential for improvements along one line only: what Kabeer (1999) refers to as "catalytic potential". As Merleau-Ponty notes, "the organism both initiates and is shaped by the environment… we must see the organism and the environment as bound together in reciprocal specification and selection" (cited in Varela et al. 1991:174). We come back to these dynamics later in the book and discuss structure and agency more fully in the Conclusions (Chapter 11).

Agricultural innovation as a multi-stakeholder process

"Innovation" is a constant theme in this book. We write about change, novelty, new technologies, new ways of working together, and the respective roles of researchers, extension workers and other actors in the value chain or chain supporters. Innovations in agriculture can occur as a result of interaction between the technologies and practices and the networks forged between organizations

and individual actors. Agricultural innovation processes are uncertain, and are characterized by exploration, experimentation, adaptation, and changing directions based on experiences and newly derived insights. Innovation emerges from the interaction of multiple stakeholders and is not only about technical change, but also involves institutional innovation.

The agricultural innovation system (Box 2.3) concept recognizes the importance of technology but also considers the social and institutional factors that bring actors together, get products to the market, ensure competitiveness and profitability and establish linkages and networks among producers, processors, traders and service providers. It brings together traditional and modern sources of knowledge. An agricultural innovation system consists of diverse, interconnected and interdependent actors. Daane (2009) refers to innovation systems as complex, open and dynamic human activity systems in which actors apply their minds, energies and resources to innovation in a particular domain of human activity.

Box 2.3 Agricultural innovation systems

A network of individuals, organizations and enterprises focused on bringing new products, processes and forms of organization into social and economic use, together with the institutions and policies that affect their behaviour and performance." (FAO working definition, Rajalahti (2012).

The boundaries of an agricultural innovation system are not fixed. Different actors may have different views on what and who is "in" or "out". This may lead to the exclusion of certain actors, and calls for special measures to promote their inclusion. Women are likely to relate to innovation systems in different ways from men.

Innovation systems are most often defined in relation to a particular domain of human activity, for example, a specific commodity, value chain or business cluster, or in a specific agricultural or ecological system (Daane 2009). In practice, agricultural innovation systems are not always self-organizing. Often there is a need for external intervention.

A way of dealing with complex systems is to recognize that people collectively, rather than individually, hold the keys to solutions and to generating opportunities that may develop into solutions. Rural areas are characterized by a highly diverse range of stakeholders involved in agriculture, each holding different kinds of assets, and with variable access to markets (Thompson et al. 2007:15). For example, some people are full-time farmers, but many mix agricultural activities and income with off-farm income sources (ibid.). Two key kinds of actors in relation to innovation are researchers and practitioners (farmers, traders, transporters, processors). Typically the relationship between researchers and practitioners is governed by what Schön (1983) refers to as "the Veblenian[1] bargain": practitioners bring their problems to the deal, and

1 Thorstein Bunde Veblen was an influential sociologist who resisted the inclusion of business, law, medicine and other professions into colleges. In the end, a bargain of sorts was struck in which a perceived separation was made between "schools of higher learning" (true scholarship) and "lower schools" (professions, intended to prepare people for professional practice). Schön sums up the compromise: "from the higher schools, fundamental and systematic knowledge; from the lower schools, but the practical problems to which such knowledge may be applied" (Schön 1995).

researchers bring their expert knowledge to apply to those problems allowing the practitioners to find solutions. The researchers' expertise rests on either research-based theory or expert intuition (Argyris & Schön 1996:34–6). However, this typical model ignores the practitioners' own theories, ways of reasoning and their own inquiry.

It is important to deconstruct the researcher–practitioner relationship. The research institutes and extension workers represent one kind of knowledge – a scientific, technical understanding of issues related to maize and cassava. By contrast, the farmers, processors, marketers, traders, transporters, input suppliers etc. hold other kinds of knowledge, insight and understanding related to their daily practice, livelihoods and aspirations. Both scientific and practical knowledge are valid and contribute to responding effectively to a changing and complex context. Neither should be prioritized over the other, though "expert" knowledge is often seen as more valid than lay knowledge or practical experience. Together the innovation platform actors are a collective whole with "distributed cognition" (Hutchins 1995): this means that each actor group holds a piece of the puzzle.[1] Different people hold different kinds of knowledge and different understandings of, or standpoints on a problem. Collectively they hold the potential for a new kind of solution. But bringing them together to arrive at the solution often does not just happen.

goo.gl/Tk4LjX

Innovation platforms are a specific form of multi-stakeholder process, rooted in agricultural innovation systems thinking: a group of actors realize that they are unable to achieve their individual objectives and ambitions without working with others so come together to find common solutions. Progress, also in relation to agricultural innovation, hinges on a social capacity for different sectors and interests to be able to engage constructively with each other. Multi-stakeholder processes can provide:

- Consultation
- Experimentation, learning and idea generation
- Joint problem solving and decision making
- Ways to overcome conflicts
- Collective action.

In most multi-stakeholder processes, actors engage for a combination of these reasons. However, the entry point to, or the primary purpose for, a multi-stakeholder process has significant implications for how it is set up, structured and facilitated.

Learning is key to innovation and multi-stakeholder processes. An organization's learning system is made up of structures that channel inquiry, and the culture of the organization further facilitates or hinders inquiry (Argyris & Schön 1996:28). This is also true of innovation platforms, though they are better conceptualized as networks rather than organizations. The structural and behavioural features of the innovation platform create conditions for in-

1 See the short film made by the Royal Tropical Institute (KIT) on agricultural innovation systems for a brief introduction: www.youtube.com/watch?v=yfqO1luKSpU

teraction, making it more or less likely for issues to be addressed or avoided. These structural features might include:

- Channels of communication – forums for discussions, both formal and informal patterns of interaction
- Information [and knowledge] systems (e.g., media, technologies)
- Spatial environment insofar as it influence interaction/communication
- Procedures and routines to guide individual and interactive inquiry
- Incentive systems that influence the will to inquire (Argyris & Schön 1996:28, [our addition])

These structures, in relation to innovation platforms, are explored further in Chapter 6 on facilitating stakeholder interaction and Chapter 10 on knowledge and information sharing.

Emergent properties

Our assumption is that multi-stakeholder processes are an end in themselves: that bringing together stakeholders creates an environment for innovation – a potential. Innovation processes are, by their very nature, unpredictable (Gildemacher et al. 2011:55). Not all outcomes can be predicted or even imagined from the outset. But both direct and indirect outcomes can be seen as the result of better collaboration and interaction amongst relevant stakeholders (ibid). This is the beauty and challenge of innovation platforms. They begin with a particular entry point and then take on a life of their own, without blueprints or road-maps as to process or outcomes. The surprises – unexpected outcomes and unforeseen results that come about through the synergy of parts becoming a united whole – are what we refer to as an **emergent property:** "Flying is the emergent property of an eagle as a majestic whole" (Woodhill and Röling 1998:69).

The idea of emergent properties that we are drawing on comes from cognitive science, though before that it was plucked from ecology, geophysics, immune networks and population genetics, amongst others (Varela et al. 1991). "Ecosystems or human societies… exhibit properties that can be neither predicted nor understood in terms of **their constituent parts"** (Vickers 1983 cited in Woodhill & Röling 1998:57). Such emergent properties are common: "…emergent properties have been found across all domains… what all these diverse phenomena have in common is that **each network gives rise to new properties**" (Varela et al. 1991:88, our emphasis). We flag what we see as emergent properties throughout the cases and thematic chapters in this book for discussion in the conclusion. Look for the butterfly icon in the margins.

Understanding emergent properties – "surprises" and "system flips" – in agri-food systems is an under-explored area, according to the Steps Centre (Thompson et al. 2007:1). In complex situations, cause and effect relations are only coherent in retrospect, are not repeated, and cannot be predicted or known in advance. Patterns emerge from the interaction of the actors in the system, leading to unforeseen outcomes and surprises. This implies a need for alternative methods, tools and techniques to understand a situation and to change, rather than relying on past experiences to understand and predict

future outcomes of actions. Understanding the complexity requires gaining multiple perspectives on the nature of the systems (Kurtz & Snowden 2003). And an adaptive, responsive attitude and the related capacities are needed from individual actors, organizations and other entities. We are particularly interested in flagging and exploring the emergent properties from the DONATA innovation platforms. They offer a strong argument for investing in multi-stakeholder interaction for agricultural development.

Guiding questions

We started this chapter with the overarching conceptual frames of complex systems and the need for resilience to address the complex problems facing agricultural development. This led us to more concrete concepts for addressing the specificities of the cassava and maize sector innovation platforms: value chain development, agricultural innovation and agricultural innovation systems, and multi-stakeholder processes. Three key concepts will come back in the conclusions to the book: structure and agency, emergent properties and resilient institutions. On this basis, we now distil some guiding questions, which bring together the conceptual frames and the practice of innovation platforms. These were explored throughout the field work and writeshop process as well as in the analysis and literature review; we will return to them again in the concluding chapter.

Processes in the innovation platform cycle We are interested in the experiences of the national agricultural research institutes in three processes involved in innovation platforms: **start-up**, **facilitating stakeholder interaction**, and **sustainability**. We are curious as to the role of the national agricultural research institutes in sector development using innovation platforms:

> *How did the research institutes go about bringing stakeholders together, decide on the composition of the innovation platforms, choose entry points, develop a strategy for facilitation, and manage the facilitation process? What sustainability plans were in place and what kind of sustainability was envisioned?*

These were guiding questions related to the processes involved in innovation platforms. They are not new subjects per se, but the DONATA experience offers an interesting and quite comparable set of cases from which to draw further insights. Conclusions as to the processes specifically are found directly at the end of each of the chapters in Part 2 of the book (Chapters 5, 6 and 7).

Facilitating innovation platforms from the vantage point of a research organization

Our starting point in doing the research and field work and in choosing cases for this book was not an analytical one or a specific research question. We started with the national agricultural research organizations' experiences in participating in DONATA. Interesting themes were extracted from the experiences

shared. Further field work was based on that. DONATA offered an opportunity to explore these questions:

What are the opportunities and challenges of facilitating an innovation platform for a research organization? What benefits and shortcomings does this particular placement of the facilitator entail?

When research organizations initiate an innovation platform, and particularly when they act as facilitators of multi-stakeholder processes, further questions arise:

What kinds of knowledge are prioritized? If facilitation is delegated to another actor, are institutional or other forms of innovation more likely?

These are questions at a higher level than the nuts and bolts of how to facilitate.

Institutional innovation focus, not just technology Often innovation projects start and stop with technology dissemination. We know from other experiences[1] that institutional innovations are key to long-term and systemic change. Complex problems demand institutional as well as technological solutions. This means connecting to policy, regulations, laws, habits, behaviour and customs, and looking along the value chain, beyond farm level, as well as at the technological packages intended to improve production. We are interested in structural change stimulated through the value chain as well as the technology dissemination. So the question was:

What is happening vis-à-vis institutional change through DONATA? Can institutional change be an outcome where technology dissemination is a starting point?

Cross-country learning A lot was invested in DONATA to allow 14 countries to simultaneously make efforts in cassava and maize value chains across West and Central Africa. Learning is key to any multi-stakeholder process: this we know. But our question regards the added value of inter-country higher-level learning:

What is the value of cross-country peer-to-peer learning, and how does this contribute to the multi-stakeholder processes underway in each country? What does cross-country learning provide vis-à-vis complexity?

The implications behind this question are quite striking. If there is a significant added value to cross-country learning, then this is an investment worth making again. Further it cements the position of CORAF/WECARD in facilitating the regional cross-country learning process.

1 For example, the Convergence of Science – Strengthening Innovation Systems Programme (CoS-SIS) mentioned in Chapter 1.

Diversity, inclusion, gender Gender is a noted oversight in agricultural innovation systems thinking and practice. Yet, in order to build robust institutions, diversity is key, which implies inclusion of both male and female actors and people from different social, economic and age categories. We were interested to explore:

What, if anything, was happening on the ground to support diversity, inclusion and gender equity?

Further, we recognize the need to support national agricultural research institutes in integrating gender dimensions and priorities into their ongoing work and policies. For this we turn not only to the rather limited empirical experiences within DONATA, but also to the growing literature on gender and agricultural innovation systems.

Sustainability, capacity to innovate and policy dynamics Often projects and their implementing organizations are so focused on the facilitation of the innovation platforms that sustainability comes only as an afterthought, if at all. Important questions are:

What needs to be sustained or put in place in order to create a resilient system, providing space to the individuals and their organizations to address new challenges, adapt to changes and mobilize others to achieve their shared interests? Is it necessary to sustain the platform itself as a structure, or is the capacity of individuals and their organizations to innovate more important? Furthermore, how can policy be influenced to support innovation and agricultural development?

The experiences in the DONATA initiative offer some interesting insights into policy dynamics and strengthening institutional level capacity to innovate in particular. These are explored in Chapters 7 and 8 and in the final conclusions to the book.

Emergent properties Innovation platforms created by the agricultural research institutes often have a strong focus on disseminating new technologies. As a consequence, the stakeholder groups present in a platform are often limited to research, extension and farmers. As such, innovation platforms for technology dissemination are basically old wine in a new bottle: mechanisms for transfer of technology, developed by research and passed on to farmers by extension. In most countries in the first phase of DONATA, this was not very different.

But what do the experiences in the six countries teach us on the potential of such technology and research driven platforms to evolve towards full blown multi-stakeholder processes, where space is created for diverse perspectives, intentions and ideas, leading to emergent properties and more institutional innovations?

DONATA provides ample illustrations to help us craft an answer to this question.

Methodological process

"Methodology can be the meeting ground for the philosophical and the pragmatic."

– Woodhill and Röling 1998:68

So now we come to the "how" of this book: how did we collect the data, understand the field cases and finally write the book? KIT's role in the DONATA process is akin to what Woodhill and Röling say about facilitating social learning: "facilitating of learning through making things visible, helping people to reconstruct realities through experimentation, discourse, observation and meaningful experience" (1998:68). It was to make sense of the DONATA partners' empirical experiences in initiating, participating in and promoting innovation platforms in the maize and cassava sectors in their countries. The KIT team played this sense-making role by drawing on the grey and academic literature and pulling out relevant concepts and like-experiences, and plugging the DONATA case experiences into theory based on their own experience of working extensively with innovation platforms in African agriculture.

In the process of writing this book, the KIT team learned with and from the national agricultural research system representatives about their field experience. We worked with them to make sense of it – initially in the Ouagadougou pre-writeshop in February 2013 by teasing out themes and deciding on the most appropriate country cases to include. And then again through feedback on the draft case writing and during the writeshop in The Gambia later that year.

But the process did not end there, nor will it even with the publication of the book. The aim is for all participants in DONATA to learn about what they are doing in the field and how that connects with ongoing debate and discussion. The representatives of the national agricultural research institutes, CORAF/WECARD, the lead facilitators of innovation platforms, the content editors and thematic chapter lead authors of the book (KIT) have a vested interest in understanding the field experience in light of a broader conceptual base.

Preparations

The selection of countries and themes to focus on began in February 2013 through discussion and preparations involving the KIT and CORAF/WECARD team. Together potential themes and interesting cases were distilled from across all 14 DONATA countries, and the agenda for the Ouagadougou pre-writeshop was developed. Through literature review and extensive experience in innovation systems and innovation platforms work, the KIT team identified conceptually interesting topics with input from CORAF/WECARD. Initial data tables from each country were reviewed, and a process for the pre-writeshop was developed to get the writing and collective book development process on track.


Photos: Geneviève Audet-Bélanger

Marketplace activity: presenting products from innovation platforms - Burkina Faso (left), Guinea (right)

Pre-writeshop, Ouagadougou, Burkina Faso

This book was written through a participatory process that began in February 2013 in Ouagadougou, Burkina Faso. CORAF/WECARD invited the national agricultural research institutes as well as other stakeholders in the national agricultural research systems taking part in DONATA to share what they were doing in their innovation platforms. Over several days, the 12 country teams[1] (one person from the research organization and a stakeholder from the innovation platform itself) shared their successes, challenges and stories. They debated the most interesting, unique or typical cases to be shared more broadly. Participants voted on the best stories and the most interesting themes for the book, as well as the most revealing country cases. Based on this, the KIT and CORAF/WECARD team arranged field visits in Burkina Faso, Cameroon, Republic of Congo, The Gambia, Mali,[2] and Sierra Leone.

The main objectives of this pre-writeshop in February 2013 were cross-country learning and selecting the themes and countries to cover in the book. To kick off the learning process, a "marketplace" methodology was used: all country representatives set up a "stall" to share key experiences, challenges and learning from their cassava and maize innovation platforms. Based on points extracted by the participants, the key challenges and learnings were clustered and then further discussed in small groups. Using an "open space" technique, the participants had the opportunity to contribute where they saw fit. Together they were able to confirm the themes selected and adapt them to reflect the discussions that took place.

1 Representatives from Liberia and Senegal were unable to participate.
2 In Mali, IITA and CORAF/WECARD led the field work as KIT advisors were not permitted to travel there due to political instability and travel warnings by the Dutch embassy.

Photo: Geneviève Audet-Bélanger

Voting matrix for participatory selection of countries and themes for the book, Ouagadougou, Burkina Faso February 2013

The next step was to agree on the cases to include in the book. The participants voted on the best cases for each theme in the 12 countries. Additional voting categories included overall "gut feeling" and the maturity of the innovation platform. The KIT and CORAF/WECARD team also voted. The result was then considered using a political and language filter: both anglophone and francophone countries had to be included, as well as countries in both West and Central Africa. As a result, the following countries were selected: Burkina Faso, Cameroon, Republic of Congo, The Gambia, Mali and Sierra Leone. Table 2.1 covered lists the six country cases and the themes they highlight.

Field work

After the pre-writeshop in Ouagadougou, KIT wrote descriptions of the themes based on the discussions, their own field experience, and the scientific literature. These were shared with the country teams along with some questions to guide the field work in each country. This field work included meetings with the country teams, interviews with key politicians and innovation platform actors, a workshop (see below), field visits and writing and final wrap-up meeting with the country team to plan the next steps.

The field visits lasted 3–5 days in each country. The KIT-CORAF/WECARD field work team did not aim to collect all the data and information required, but rather to inspire the writing teams to gather the stories, quotes and figures to be used in this book. The KIT-CORAF/WECARD team (in Mali IITA-CORAF/WECARD) met with key stakeholders, including actors who participate in the innovation platforms, politicians and community members, to get a taste of what was at the heart of the platform under examination. The KIT-CORAF/WECARD team supported the national writing/research teams to prepare drafts for their country cases.

After the field work with the KIT-CORAF/WECARD team, the national writing teams had the difficult task of going deeper – meeting with key informants,

Table 2.1 Country cases and themes covered

	Start-up and composition	Facilitating stakeholder interaction	Sustainability	Policy pathways	Gender and inclusion	Knowledge and information sharing
Maize						
Burkina Faso	X	-	X	X	-	X
Mali	X	X	-	-	-	X
The Gambia	X	X	X	X	-	-
Cassava						
Sierra Leone	X	-	X	X	X	-
Republic of Congo	X	X	-	-	-	X
Cameroon	X	X	-	-	X	-

digging for data in documents, and holding platform meetings to discuss key issues. Based on this, they wrote first and second drafts of the cases. KIT and CORAF/WECARD provided detailed feedback to support the re-shaping of the cases and indicated where further attention was required. Over the course of about 3 months, the writing teams gathered the information needed and provided comprehensive draft case material.

A key moment in the field work was a one-day workshop in each country with innovation platform actors, organized by the local research institute team. The KIT team guided the participants in exploring stakeholder interaction within the innovation platform. The methodology was based in parts on cards from the "rapid appraisal of agricultural knowledge systems" (RAAKS) toolkit (Engel & Solomon 1997). Box 2.4 details the process used.

Photo: Geneviève Audet-Bélanger

A group of non-government organization staff and extension workers working on their version of the septagram at the CORAF-KIT workshop with innovation platform actors in Sierra Leone.

Box 2.4 Innovation platform workshop guidelines

1. Introduction/icebreaker

In plenary get people talking and sharing and see who is in the room. Ask these questions:

- When did you get involved in the innovation platform?
- What were your first impressions/reactions when you learned about the innovation platform?
- Were you interested? Did you have doubts? If so, what were they?

2. Linkage matrix

Ask what kinds of actors participate in the innovation platform. List the responses in the matrix prepared in advance on the wall (RAAKS tool B4/a, Engel & Salomon 1997). Ask which actors each group has engaged with since joining the innovation platform. Each group should respond on its own behalf. Their responses do not need to be the same for both sides of the interaction.

3. Linkage mechanism checklist

For each cell in the interaction matrix, discuss the nature of the interaction. Start where both groups of actors say the interaction is important. Respond to the following questions on coloured cards or sticky notes.

- Who is interacting? Which people within that actor group?
- Why? What is the purpose and nature of the interaction?
- How often? What is the frequency of the interaction?
- Where does it take place?
- How? (e.g., meetings, by phone, emails, internet…..)
- What does each actor gain or lose in the interaction?

(RAAKS tool B4/b, Engel & Salomon 1997)

4. Prime mover septagram

Invite each actor group to construct a separate septagram showing the relative influence of each actor group within the platform based on a score of 0-5: 0 = no influence, and 5 = high influence. Share and compare the various septagrams in plenary. Discuss differences in perceptions. Construct a final septagram that reflects the agreed relative influence of each actor category. The outcome of this process (six septagrams, one for each country) are presented and discussed in Chapter 6.

(RAAKS tool A5/B6, Engel & Salomon 1997)

Filmed interviews During the workshop, a filmmaker interviewed key actors in the innovation platform; these films were later edited and subtitled in English and French, and uploaded to the internet. They allow viewers to hear the voices and practical experiences of the people involved in the platforms: farmers, transporters, traders, processors, policy-makers, researchers, extension workers and so on. You can view these films by visiting the links or scanning the square QR codes in the margins (see Chapter 1 for an explanation of how to do this).

Photo: Geneviève Audet-Bélanger

Interviewing and filming Omar Drammeh, an actor in the Fass Saho maize innovation platform as well the vice-president of the regional innovation platform in the North Bank Region of The Gambia.

Writeshop, The Gambia

Once the KIT–CORAF/WECARD team left each country, the research and writing work began for the country teams. Two rounds of feedback were provided to the writers so that the detail needed on each theme was captured for reworking in the writeshop. Preparatory writing of the thematic chapters with links to cases was done by KIT, as was the literature review for the various themes and the introduction to the book. In July 2013, a writeshop was held in The Gambia. The focus was to refine the draft cases and elaborate the thematic chapters of the book.

Anyone who has participated in a writeshop knows that they are intensive and not for the "faint of heart". The concept was originally developed by IIRR and partners who saw that field workers were good at documenting learning and sharing their knowledge (Gonsalves & Armonia 2010). Later, researchers came on board, recognizing the limited relevance of their knowledge products (e.g., scientific articles) and how poor communication was affecting the usability of their research. For the research community, writeshops were used to transform research outputs, often referred to as a "repackaging" effort (Gonsalves & Armonia 2010). Since the first IIRR writeshop in 1987, the methodology has been used and adapted for scores of participatory writing processes since then. Writeshops help to document tacit "experiential" knowledge as well as enhance the relevance of explicit "expert" knowledge, by making it understandable and thus, more easily usable (Kala in Gonsalves & Armonia 2010). The principles are quite simple, but the practice of a writeshop is fully engaging and quite exhausting, as anyone participating will attest. But they can also be a lot of fun and are without question a learning process for everyone (facilitators definitely included).

Rewriting cases The writeshop in The Gambia consisted of several parts. A language editor/ghost writer interviewed the country representatives in turn about the draft cases they had prepared. He helped them rewrite the text to draw out stories of relevance for the book and give the cases a similar structure and common style. The cases were then peer reviewed and further refined. The results of this rewriting are found in Chapters 3 and 4.

Box 2.5 Guiding questions for DONATA country representatives on sustainability

- **Objectives** Has the innovation platform achieved its purpose? Is there a felt need to continue?
- **Plans** What are the intentions for each innovation platform post-DONATA? What steps are being taken?
- **Funds** What happens when DONATA funds conclude? Who pays for the innovation platform facilitation and activities?
- **Capacity** Who (individuals or organizations) has the capacity to continue facilitating or managing the innovation platform?
- **National agricultural research institutes** What role will they have in continuation after the initiative comes to a conclusion?
- **Power to decide** How is the decision taken as to whether or not to continue?
- **Public support and policy** Is there national government support for continuing the innovation platform? If so, how?

Editing films At the same time, the film producer edited the films and prepared subtitles in English and in French; participants and CORAF/WECARD staff added subtitles for those interviews that were in local languages.

Analysis of themes Meanwhile, the writeshop facilitators worked with the other participants to develop the thematic chapters (Chapters 5–10). The KIT facilitators led plenary sessions and interviewed the participants on the six thematic chapters. The drafts for each theme were shared with the participants using a projector, and the discussions unfolded from there. For the most part, two plenaries were organized for each theme: one in French and one in English. In some cases, (e.g., for gender) a plenary was not used; instead the facilitator met with country representatives from Sierra Leone and Cameroon, who had been asked to focus on gender and inclusion in their case research. Box 2.5 is an example of the guiding questions used; similar lists of questions were developed for the other themes.

Country representatives were also asked to provide more detailed information on specific questions related to a theme: we referred to this as "homework". Plenaries also discussed the draft of the introductory chapter, and to generate initial conclusions on the themes from the perspectives of the country representatives.

Based on these inputs and the conceptual framework described above, the KIT writers sifted through all this material to understand the DONATA experience in light of current thinking on innovation platforms and agricultural innovation systems.

Developing diagrams to show platform history The country representatives identified the important moments in the life of their innovation platforms: the start of the contract with DONATA, the first operationalization, two key learning moments, the number of platforms, the date they started up, the number of stakeholder categories, the timing of new stakeholders joining the platforms. That input was then further analysed, corrected and adjusted to arrive at the diagrams that appear in each case in Chapters 3 and 4. These diagrams reflect the evolution of the different platforms. They reflect the start-up, composition and variety of the innovation platforms.

After the writeshop

The writeshop was not the end of the process of writing this book. After the writeshop there was still a lot to do to tie the various pieces together and make a coherent story of the many inputs that had been gathered. In the months that followed, KIT continued with analysis of the cases and development, design and adaption of the diagrams, reviewed the films and selected quotes to include in the cases and thematic chapters. KIT revised, re-worked, re-wrote and re-considered the thematic chapters and the overall conclusions. KIT and CORAF/WECARD together wrote the introduction. The language editor further revised and finalized the cases and adjusted the language and style where necessary to get the messages across clearly. He also designed the icons and created visual representations for the data provided by the research institutes.

The book was then sent to CORAF/WECARD for a review of the data to eliminate any factual errors. The country representatives who participated in the writeshop were given the opportunity to read the entire text and point out any misinterpretations. Professor Emeritus Niels Röling, a renowned authority on agricultural innovation systems and proponent of smallholder voices being heard, wrote the preface.

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Part 1
Cases

Symbols used for platform actors

In the lists in this section, we use the following symbols for platform actors. Note that some actors play multiple roles and could be categorized under several headings other than the one depicted.

Figure 3.1 Key to platform actor symbols

3 MAIZE IN WEST AND CENTRAL AFRICA: AN INTRODUCTION

Previous page: Sacks of maize in the market in Serrekunda, The Gambia

Photo: Geneviève Audet-Bélanger

3 MAIZE IN WEST AND CENTRAL AFRICA: AN INTRODUCTION

Rhiannon Pyburn

Maize, thought to have originated in Mexico (Gibson et al. 2002), is the preferred staple crop of 900 million of the world's poor and one-third of all malnourished children (Hyman et al. 2008). Together with rice and wheat, maize provides 30% of all calories for more than 4.5 billion people in 94 developing countries. It is produced on nearly 100 million hectares across 125 developing countries and is among the three most widely grown crops in 75 of them (FAOSTAT 2010).[1] Over 500 uses for maize have been cited (Gibson et al. 2002).

Since it was introduced into Africa in the 1500s (Miracle 1965), maize has become one of the continent's most important sources of food. As early as the sixteenth century, maize was widely grown along the coast from the River Gambia to São Tomé, around the mouth of the River Congo, and possibly in Ethiopia (ibid.). There is also documented reference to maize in Zanzibar, and around the mouth of the River Ruvuma in Tanzania in the seventeenth century. Further it was described as an important foodstuff and a major provision for slave ships between Liberia and the Niger Delta during the same century (ibid.).

Today, maize is grown both for sustenance and as a cash crop (USAID 2008:xi, 24). This phenomenon is quite recent in many countries, for example in northern Benin, where there is a shift from sorghum to maize (ibid:5). In Burkina Faso and Mali maize is mostly grown as a cash crop, whereas along the coastal region from Togo to Nigeria it has become a dominant food crop (USAID 2008:5). In some countries, maize is inexorably intertwined with food security (Day 2012): "Without maize, many Kenyans believe they do not have 'food'".[2] Maize dishes vary from one culture to the next, for example: *ogi* (Nigeria), *kenkey* (Ghana), *koga* (Cameroon), *tô* (Mali), *injera* (Ethiopia), and *ugali* (Kenya) (Okoruwa 1996). Most of these products are processed in traditional ways: maize is ground and cooked into a paste and eaten warm (ibid.).

Maize is a good source of carbohydrates, but the quality of its protein is low, and it is deficient in some amino acids (lysine and tryptophan) (ACDI/VOCA, no date; Okowura 1996). And, it contains excesses of other amino acids (like those containing sulphur), which reduces protein uptake (ACDI/VOCA, no date). So maize is best consumed with large quantities of protein-rich foods such as legumes, dairy, seeds, fish and meat, and with micronutrient-rich vegetables (e.g., leafy greens). It is a good source of vitamin B and B_{12} and yellow maize also provides vitamin A and the maize germ is rich in vitamin E (Okowura

1 http://maize.org/
2 http://tinyurl.com/pgovk9v

1996).The nutritional disease pellagra – caused by a deficiency in niacin – is associated with maize-based diets (Okowura 1996).

Maize production in Africa has been growing steadily over the past 20 years. It is sown as a monoculture and in rotation with cotton, for example. In some cases millet and sorghum is replaced by maize. Farmers prefer maize to these more traditional crops for its higher-yielding varieties, ease of production and response to fertilizers (USAID 2008:24). In West and Central Africa, maize production is widespread, particularly in the south and centre of the region. It is grown most in cotton-producing countries of the region (Benin, Burkina Faso, Côte d'Ivoire and Mali), with the fertilizer bought for cotton also being used for the maize (AFD et al. 2013:65). In West Africa, maize is grown mostly by smallholder famers; most produce 1–2 tonnes per season and sell it to local traders (USAID 2008).

Maize is a priority supply chain for ECOWAS (the Economic Community of West African States) and UEMOA (the West African Economic and Monetary Union), so enjoys significant political support (AFD et al. 2013:69). In West Africa, a large share of maize is consumed by the people who grow it. Urban consumption is substantial and absorbs approximately 41%, against 59% for rural consumption. This urban share is likely to grow (AFD et al. 2013:68). Urban consumption of maize in 2009 in Burkina Faso was 22%, in Mali 10%, and in The Gambia 41% of total maize consumption (AFD et al. 2013:43). In some countries "maize politics" are played out at the highest levels of government (Day 2012).

Cross-border trade in maize is very high in the region. Key regional markets include Niger, Benin, Ghana and Senegal, with an emphasis on Niger as it has significant production shortfalls and maize deficits to manage (USAID 2008:12). Mauritania and Senegal rely on maize imports, largely from Mali and Burkina Faso, to meet their food security needs (ibid.:25). The three main value-added activities in West Africa for maize are fortified food processing, animal feed and commercial beer brewing (ibid.:12). However, the capacity to make semi-processed products from maize is weak, and there are few contractual links between producers and processors for larger-scale, reliable transactions (AFD et al. 2013:70). Sales of processed products remain closer to home.

A key challenge in the West African maize value chain is poor information dissemination (USAID 2008:25). Other bottlenecks identified by USAID fall into two categories: production and cross-border trade. Production constraints include poor access to agricultural inputs, erratic rainfall, dependence on rainfed agriculture, frequent droughts in the Sahel (USAID 2009:14–15) and the crop's sensitivity to drought, especially at the start of flowering (AFD et al. 2013:70). Labour availability is an ongoing challenge, especially during planting, weeding and harvest. Milling problems include the rising costs of energy, storage, and inconsistency in supply (USAID 2009:14–15). Insects and fungi can cause losses of 20–50% when the crop is stored on farms (USAID 2008:6). Other major constraints include vulnerability to certain viruses and little or no seed production by the private sector in francophone countries (AFD et al. 2013:70).

The second cluster of bottlenecks identified by USAID relate to trade and cross-border trade in particular. It includes export and border hassles such as bureaucracy at the border, periodic prohibitions on exports, and the need for transporters to make illicit payments; non-standard measures, with maize

sold by volume rather than by weight; inadequate storage space; poor marketing and a lack of accurate market information, enabling speculative traders and agents to drive down prices paid to farmers; low volumes making smallholders uninteresting for larger buyers, and forcing them to depend on small-scale traders who bulk the product; and uncompetitive regional maize prices and fluctuations in availability from one place to another (USAID 2009).

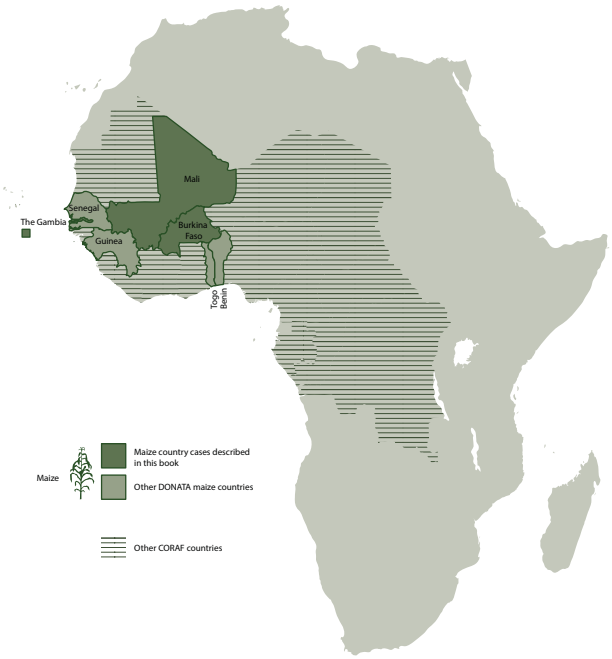

Figure 3.2 Countries focusing on maize in DONATA

Maize gets quite a lot of research attention through CIMMYT (the International Wheat and Maize Improvement Center), and national agricultural research institutes. This includes research on gender-related issues. For example, a recent article by researchers from CIMMYT focused on gender dimensions of crop and varietal selection preferences. Men and women often prefer different types of maize (Beuchelt & Badstue 2013:711). Men tend to prefer higher-yielding varieties and want to be able to sell the surplus. Women, on the other hand, are more concerned with ensuring the family has enough to eat; they choose varieties that are more palatable, nutritious and easier to cook, store and process. This observation is backed up by other studies (e.g., Hellin et al. 2010, Badstue 2006, Bellon et al. 2003).

This chapter looks at maize innovation platforms in Burkina Faso, Mali and The Gambia. The first case (Chapter 3.1) looks at maize production, marketing and processing in **Burkina Faso** from the vantage point of researchers from the **Institute for Research on the Environment and Agriculture.** Many stakeholders at different political and social levels participate in the platforms to make the maize sector more profitable for all. The case illustrates the benefits of grain and seed production for farmers and the development and spread of the innovation platform concept. This case is a good example of a complete cycle for innovation platforms from the local level up to influencing national policy. It demonstrates how multi-stakeholder processes, when taken seriously and done conscientiously, can greatly benefit not only a particular sector, but also agricultural development more broadly as they have been adopted by policy.

Chapter 3.2 takes us to **Mali**, where the **Institute for the Rural Economy** initiated a set of innovation platforms. Low yields are a problem here: the platforms investigated how farmers could be encouraged to trust the new varieties

developed by the researchers. The innovation platforms have begun to address the challenge of poor information dissemination. As stakeholders are brought together, they get to know one another and relationships are established. The case is a good example of the importance of communication amongst platform actors and within the sector.

For **The Gambia** (Chapter 3.3), maize is an important food security crop. Innovation platforms established by the **National Agricultural Research Institute** aim to promote new varieties, as well as to help farmers improve their soil fertility and organize them to market their output and overcome labour shortages. This is a fine example of how an innovation platform can tackle the many constraints that face maize production and marketing. The case also looks at policy: the production groups have set up a separate innovation platform for this purpose.

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3.1 MAIZE IN BURKINA FASO: FROM PRODUCTION TO POLICY INFLUENCE

Previous page: Maize seed in the warehouse of Kabore Karim in Burkina Faso.

Photo: Geneviève Audet-Bélanger

3.1 MAIZE IN BURKINA FASO: FROM PRODUCTION TO POLICY INFLUENCE

Taonda Sibiri Jean-Baptiste, Kafando Abdoulaye and Sidi Sanyang

Entry points

Farmers' access to improved maize varieties and soil fertility enhancement

Local agro-food products processing, adding value and marketing

Maize grain and seed marketing

Policy engagement on maize value chain development

Platform stakeholders

Researchers: Introduce and train actors on new technologies, facilitate platform
Institut de l'Environnement et de Recherches Agricoles, INERA
Department of Food Technology / Institut de Recherche en Sciences Appliquées et Technologies

Farmers: Grow maize

Farmers' organization: Extends the new technologies and approaches to members of the farmers' organization, facilitates platform
Fédération Nian Zwè and their local groupings

Local policymakers: Provide political support

Policymakers: Provide political support
Provincial government

Extension: Advise farmers on new techniques, monitor implementation, facilitate platform
Direction de la Vulgarisation et de la Recherche-Développement, Provincial Directorate for Agriculture

Microfinance: Provide loans for production, processing and marketing
Agence communautaire pour le financement
Banque Régionale de Solidarité du Burkina Faso
Ecobank

Local radio, national press: Disseminate information to a wider audience
Radio Évangile Développement (rural radio)
La RED/Sissili & Agence d'Information du Burkina Faso (private printing press)
National TV, national Radio Burkina
Sidwaya (national daily newspaper)

Traders and wholesalers: Buy, sell and distribute grain
Céréalière du Faso, Comité Interprofessionnel des Commerçants de Céréales du Burkina Faso, Association Provinciale des Commerçants de Céréales, others

Transporters: Transport grain
Association des transporteurs de la Sissili

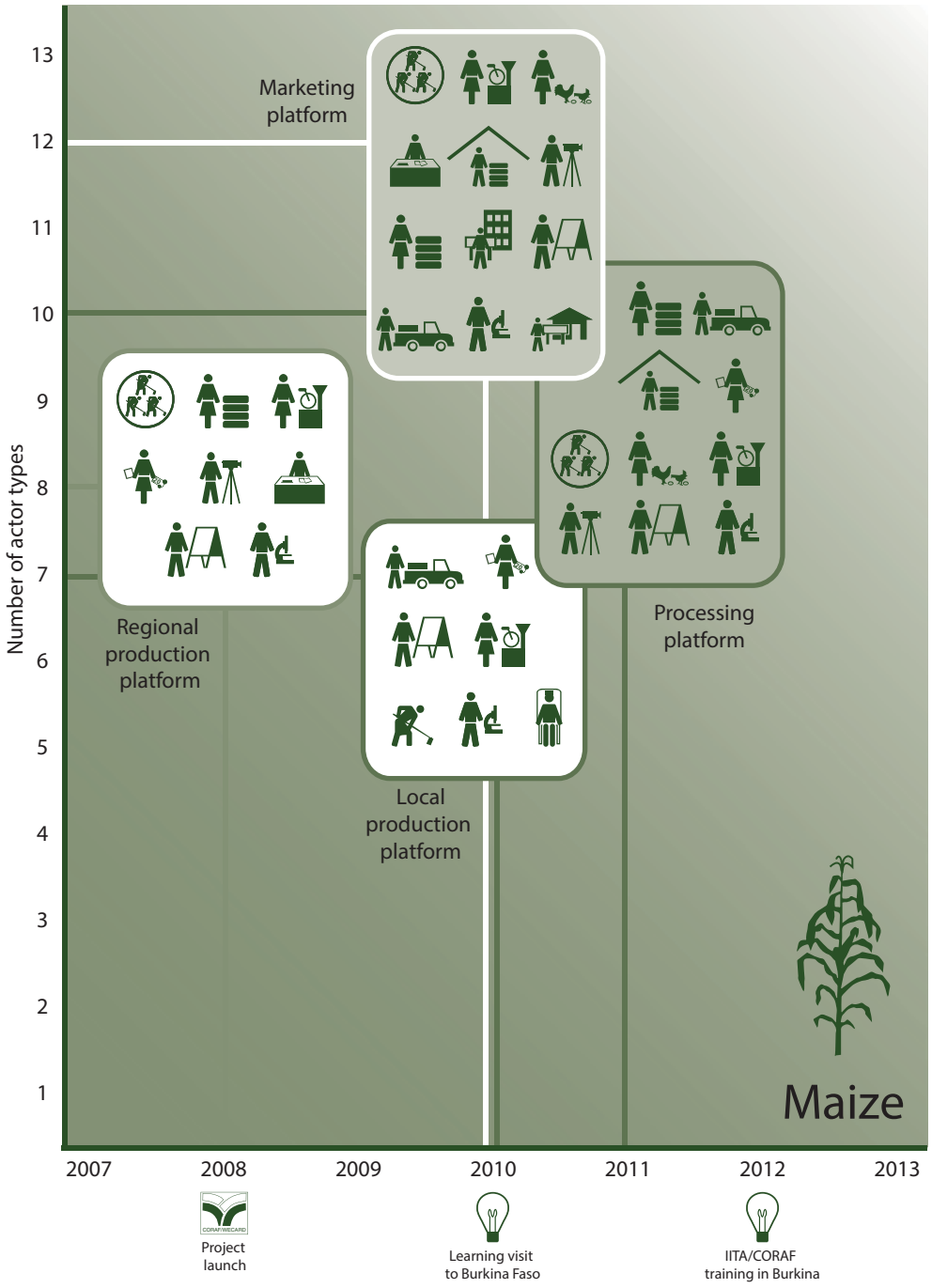
Processors: Process grain into flour and other products
Association des Transformateurs de Céréales du Burkina Faso, Djigui-Espoir, Association Femme-Enfants plus, Etablissement Sapientia, Centrale de transformation des produits agricoles, other processors

Chicken producers: Buy maize to feed to chickens
Association des aviculteurs de Ouagadougou

Food security organizations: Purchase grain in bulk for national food security
Société Nationale de Gestion du Stock de Sécurité Alimentaire

International organizations: *World Food Programme*

Nongovernment organizations, lobbying groups: *Christian Relief and Development Organization, Réseau de veille sur la commercialisation des céréales*


Number of actor types
13
12
11
10
9
8
7
6
5
4
3
2
1
Marketing platform
Regional production platform
Local production platform
Processing platform
Maize
2007
2008
2009
2010
2011
2012
2013
Project launch
Learning visit to Burkina Faso
IITA/CORAF training in Burkina

It was 2008, and Arzouma Namoro was thinking about heading south to find a job in the cocoa plantations of Côte d'Ivoire. He was not able to grow enough to feed his family, and could not get enough outside work to earn a living. But then the Fédération Nian Zwè, the farmers' association he belonged to, joined an innovation platform facilitated by INERA, the national agricultural research institute in Burkina Faso. This platform focused on maize, an important crop in the area. Through it, Namoro and his colleagues got seed of improved varieties, and learned about how to raise their soil fertility so they could grow more. At first he produced 2.5 t/ha on his 8 ha of land. That was enough to feed his family and cover their household expenses. Encouraged, he planted a larger area, and by 2012 was growing 14 ha of maize and getting a yield of 4.9 t/ha. He was elected president of the association and has started several new businesses: he now raises guinea fowl, has opened a restaurant and a shop where customers can recharge their mobile phones, and has built a house in Léo, the capital of Sissili province, which he rents out. He can now afford to send his children to private school, and has built up enough capital to be able to buy all the inputs he needs, so he no longer has to borrow money at the start of the season.

Agriculture lets us get out of poverty and is an economic activity like any other.

– Arzouma Namoro, president, Fédération Nian Zwè

goo.gl/Kv3zSY

Namoro's story is not unusual for the farmers associated with the innovation platforms. Since it was launched in 2008, this approach has expanded to include 16 innovation platforms in Sissili and neighbouring Ziro provinces, in the south of the country.

INERA started the innovation platforms to deal with a series of problems besetting maize production. The soils in this part of the country are sandy, infertile and low in phosphorus; farmers sow seed of low-yielding varieties, and they tend to plant them too far apart, reducing the total production.

The INERA researchers introduced a series of technologies: ploughing the soil to prepare a good seedbed; planting at closer spacing; applying fertilizer in two lots (one at planting, and the other about a month later) to prevent the loss of valuable nitrogen; and using compost and manure to enrich the organic matter content of the soil. It introduced 14 new, high-yielding varieties, some of which mature quickly, so avoid the risks of pests and drought.

The first platform

The process began in 2007, with a DONATA workshop in Dakar that introduced the idea of innovation platforms to help disseminate new technologies that were "on the shelf". INERA had developed several such technologies that for one reason or another had not been adopted widely. Innovation platforms seemed to be a promising way to introduce these to farmers and iron out any problems with adaptation and dissemination.

Photo: Geneviève Audet-Bélanger

Maize seed for sale by local seed entrepreneurs

A follow-up workshop at INERA's head office chose to focus on maize as it had been relatively neglected in Burkina Faso. It decided to begin work in Sissili, a maize-growing area south of the capital, Ouagadougou, where there was a strong provincial farmers' organization (now called the Fédération Nian Zwè). The provincial government and the extension service were also highly supportive.

This initiative launched an innovation platform at the provincial level with eight types of actors: farmers, policymakers, extension, research, microfinance, processors, traders, and the media (local radio and newspapers). INERA introduced the idea to these actors, and they discussed the problems facing maize production and the maize value chain, and designed ways to overcome them.

goo.gl/7zzfG8

Several approaches were chosen. The researchers and extension staff set up demonstration fields and farmer field schools to introduce the new varieties and help the farmers learn about the improved technologies to the farmers. They conducted various tests on fertilizer and soil amelioration methods. They multiplied seed ready for distribution, and trained a group of 10 farmers to produce certified seed. That made it possible for the farmers to adopt the new technologies.

> *What I really like about the platform is that we have gained knowledge and skills. I have not been to school, but because of the learning and exchange visits, I can now speak easily in public and know how to conduct myself.*
>
> *– Azize Nignan, grain and seed producer, regional production platform*

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Platforms for purposes

The actors involved in the regional platform realized that it would be necessary to create community-level platforms to deal with local problems. So in 2010,

another seven innovation platforms were established in communes in Sissili province. These platforms bring together the farmers' groups with researchers, extension staff, local policymakers, private-sector agribusinesses, non-government organizations, a microfinance organization and the media. The focus of these platforms is to improve **maize production and quality**. The researchers and extension staff arrange farmer field schools, demonstrations, field days and exchange visits where farmers can learn production techniques. Radio programmes and printed media are part of this information dissemination effort. The presence of microfinance institutions on the platform makes it easy for them to arrange credit for the farmers.

> *Producers have gained credibility in the eyes of banks and microfinance institutions. They used to be suspicious of producers, but through the innovation platform they have learned to engage with producers and trust them. The finance institutions are now aware of the political, technological and technical backstopping offered to the producers participating in the innovation platform.*
>
> *– Dagano Moussa Joseph. grain producer and former president of Fédération Nian Zwè*

The support of local government policymakers is important to ensure collaboration among the various stakeholders.

In the same year (2010), a new innovation platform at the provincial level was established to deal with the **marketing of grain**. Actors participating in the production and marketing platforms overlap: the farmers' groups and two-thirds of the institutions are represented on both.

Farmers often get low prices for their grain because of low product quality and poor organization. This platform has helped the actors of the Fédération Nian Zwè to improve the quality of their grain, build relationships with potential customers and service providers, and sell collectively.

It works like this. Members of the local farmers' cooperatives bring their newly harvested maize to a central location in the community. The co-op then arranges for it to be transported to a warehouse in Léo, the provincial capital, managed by the Fédération Nian Zwè. The federation checks the quality, negotiates with buyers, and manages the trade.

Bulking their grain in this way gives the farmers a lot more bargaining power: they are able to negotiate favourable prices. The federation has increased the grade of its grain from B to A, and supplies the Société Nationale de Gestion des Stocks de Sécurité (the national strategic food reserve) and the Association des Aviculteurs de Ouagadougou (an association of poultry producers).

Some farmers specialize in producing maize seed. They supply this to the cooperatives in the Fédération Nian Zwè and to individual farmers.

Because of the success of this approach, in 2011 an additional six community-level innovation platforms were created in neighbouring **Ziro province** to handle production issues.

A new development is the creation of an innovation platform based in Ouagadougou, the national capital, to address **maize processing** issues. This platform is based in Ouagadougou. This links farmers' organizations with

Photo: Geneviève Audet-Bélanger

"Life is food; food is agriculture; agriculture is seed; seed is life": From the maize seed warehouse door of Kabore Karim in Sissili, Burkina Faso. The seed stock financed fertilizer purchases.

processors, distributors and food scientists. The idea is to enable various actors in the value chain to earn more by developing and promote high-quality maize-based products. The 10,450 farmers belonging to the groups in Sissili and Ziro now produce nearly 260,000 tonnes of maize a year.

The processing and marketing platforms also deal with **policy issues** at the provincial level. We describe this later.

Into the future

The Fédération Nian Zwè is a big, well-managed organization: it has more than 20,000 members in the two provinces of Sissili and Ziro, organized into provincial, communal and village associations. It arranges for farmers to train their peers on maize production; these trainers are volunteers but have their travel expenses paid by the federation. These are encouraging signs for the future of the innovation platforms.

The platforms also encompass some 250 entrepreneurs who process and add value to the farmers' output. Between 2008 and 2012, their income rose between two- and five-fold as a result of their involvement in the platforms.

The platform actors have agreed to cover their own costs for meetings and activities. That makes it possible for the platforms to continue to function after the end of DONATA.

The engagement of policymakers is spreading the innovation platform idea to other commodities: kenaf (a fibre crop), sunflower, fonio (a grain crop), vitamin/salt blocks for livestock, cowpea, livestock and meat, sesame and shea butter – many of the major agricultural commodities produced in Burkina Faso.

Communicating the work

The platforms give the various actors a framework to conduct joint activities, exchange information, and learn from each other. The balance after 4 years of work is impressive: 300 field days, 12 radio programmes in local languages, and six articles in *Sidwaya*, a national daily paper. Farmers from other villages and provinces have visited the platforms to learn what they are doing. Arzouma Namoro, the president of Fédération Nian Zwè, welcomes many such visitors each year to his fields. Farmer field schools, demonstration fields, exchange visits and study tours are other important means of familiarizing people with new techniques. One example is a visit by two federation advisors to Côte d'Ivoire in February 2013, where they described the Burkina Faso experience with innovation platforms to their Ivorian counterparts.

"Communication is important before, in the start-up phase, during and after each activity."

– Nignan Olivier Alexandre, provincial correspondent in Léo, Burkina Faso Information Agency (AIB)

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How platforms influence policy

The provincial governor of Sissili has been a key factor in ensuring the platforms have an impact on policy. He was chosen to co-chair the provincial-level platform, and he and the chair of the farmers' federation sit on the provincial co-ordination committee, the policy platform mentioned earlier. This body makes it possible to make local governments aware of problems (for example the bad condition of the roads in their districts), and to lobby the national government.

The governor is also key to generating trust among the platform actors, managing interactions and resolving conflicts (for example, between farmers and herders). His presence increases the visibility of the platform at the provincial and national levels.

"I guess our role in these consultations is to establish trust among actors and promote free speech by our mere presence. Actors do not always share the same interests. If the governor is attending the meetings, it is more likely that the national policy will be followed."

– Sanadogo Anthyme, provincial governor, Léo regional production and marketing platforms

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"I was astonished by the district governor's testimony and his wish to become an advocate for producers' interests. He testified that he now knows the producers and how the platform functions."

– Dagano Moussa Joseph, grain producer and former president of Fédération Nian Zwè

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Evidence of this impact has come in the form of a visit by the Minister of Scientific Research and Innovation. This resulted in the establishment of multi-stakeholder platforms for six new commodities (kenaf, *souchet* (tigernut), sunflower, sesame, fonio and vitamin/salt blocks). A new World Bank project, the West Africa Agricultural Productivity Programme, will expand the innovation platforms approach to shea (a nut used to make a type of butter), cowpea, livestock and meat, and rice. The Ministry of Agriculture and Food Security has also integrated innovation platforms as a tool in the agricultural extension system.

"The DONATA approach can be extended to other sectors. At the ministerial department level we have decided to use the approach as the main method for innovation and technology dissemination."

– Prof. Konaté Gnissa Esaïe, Minister of scientific research and innovation

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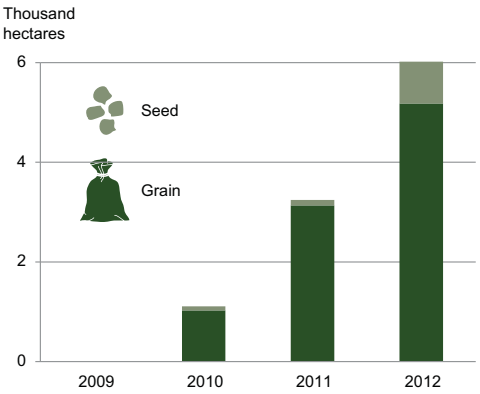
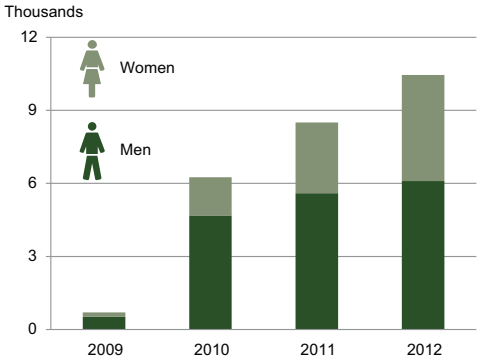
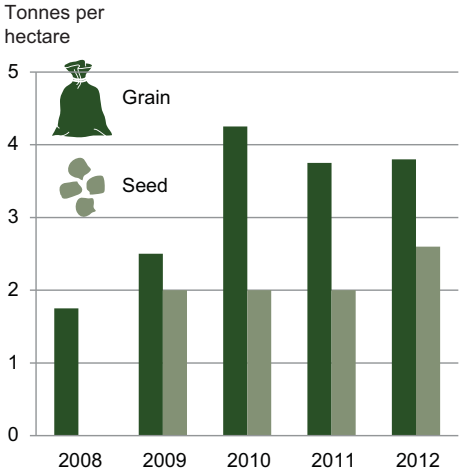


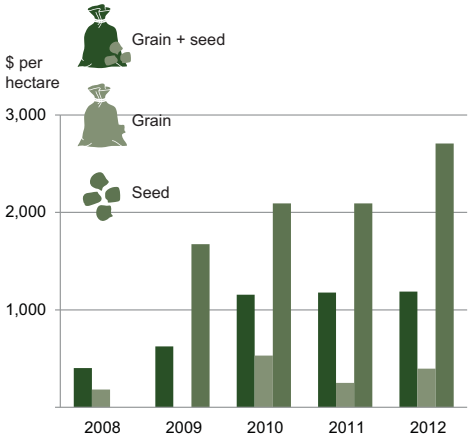
Total production area of innovation platform actors



Beneficiaries of innovation platforms



Average yield of innovation platform actors



Value of output per hectare

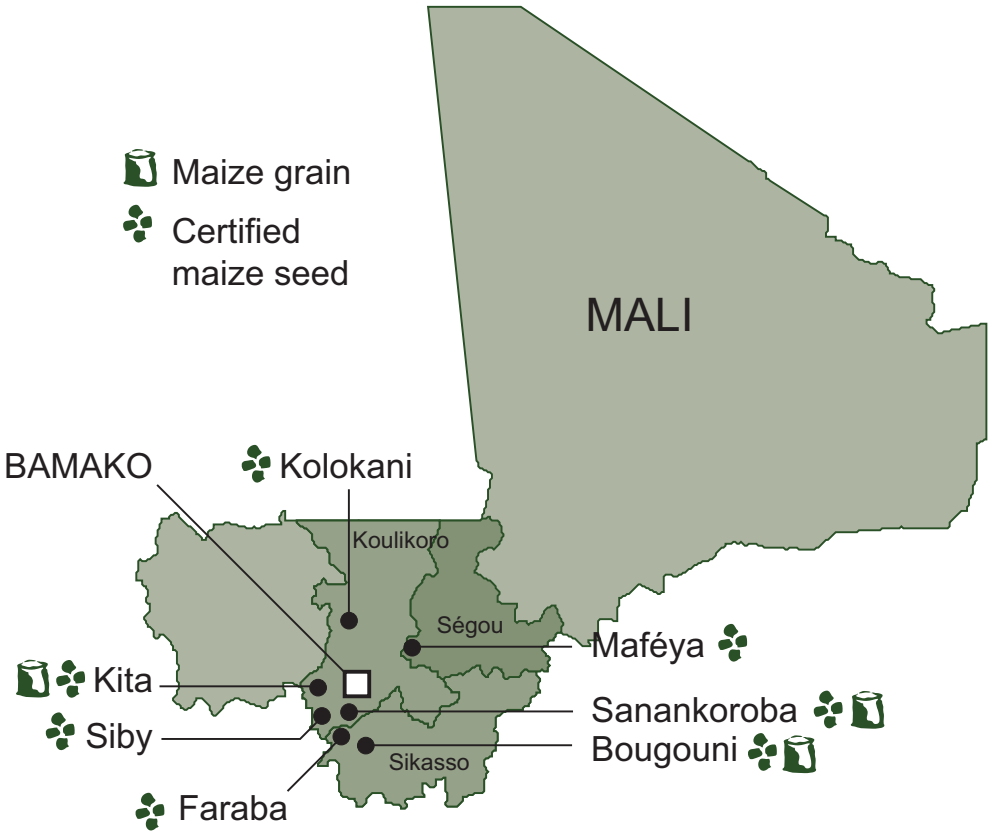
3.2 MAIZE IN MALI: REAPING WHAT WE SOW

Previous page: Women from the Kita innovation platform tasting couscous - tô from maize varieties.

Photo: Lassina Toure

3.2 MAIZE IN MALI: REAPING WHAT WE SOW

N'Tji Coulibaly, Laban Konaté and Sidi Sanyang



Entry points

Farmers' access to improved maize varieties and soil fertility enhancement

Maize grain and seed marketing

Platform stakeholders

Researchers: Facilitation, supply of new technologies
Institut d'Économie Rural, IER

Farmers: Grow maize grain and seed

Seed company: Supply seed and other inputs, purchase seed output
Faso Kaba

Extension: Support and advise farmers

Traders: Purchase grain, sell to processors and consumers

Transporters: Transport grain

Farmers' group: Coordinate farmers' activities

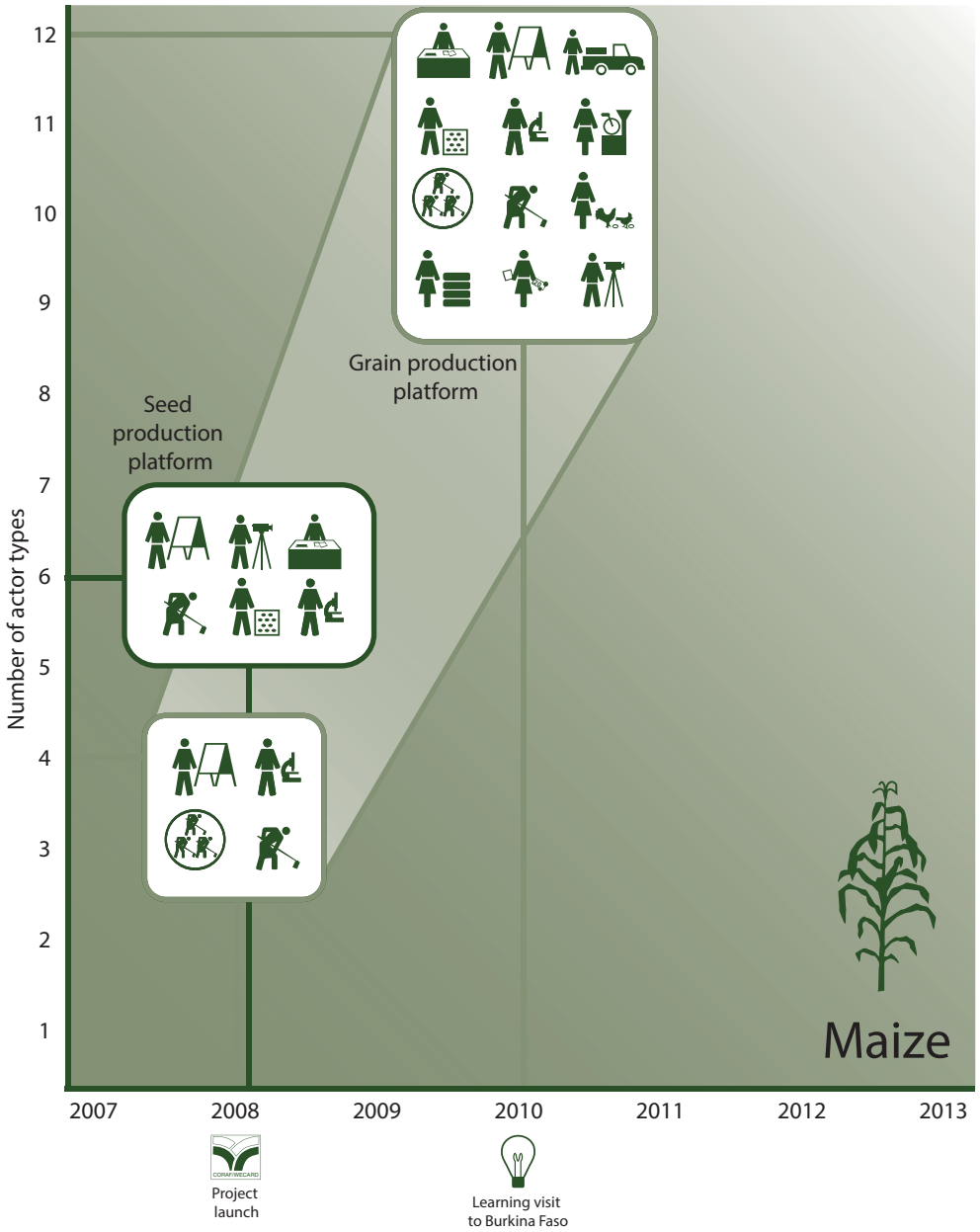
Poultry producers: Purchase grain for use as feed

Processors: Mill maize, produce flour, couscous etc.

Microfinance: Provide credit for production and marketing to farmers and traders

Local policymakers: Provide confidence and encouragement

Media: Broadcast news and technology information on community radio and national television


Number of actor types
12
11
10
9
8
7
6
5
4
3
2
1
Grain production platform
Seed production platform
Maize
2007
2008
2009
2010
2011
2012
2013
Project launch
Learning visit to Burkina Faso

Maize is an increasingly popular crop in Mali, but yields are still low, averaging 2.2 tons per hectare. One of the biggest problems is the local varieties that farmers usually plant: they yield only 1.5 tons/ha and are susceptible to various diseases and striga (a parasitic weed).

Improved varieties already exist: the Institut d'Économie Rurale (IER, the national agricultural research institute) has developed and tested eight new open-pollinated and five hybrid varieties. But farmers either have not heard about them or are reluctant to use them because they suspect the researchers are too closely allied with national politicians. They are unfamiliar with improved production methods, and cannot afford to buy expensive fertilizers and other inputs. They produce small amounts of grain that tend to be poor quality. They are poorly organized for marketing: the farmers sell individually to traders, and traders and farmers distrust each other.

DONATA aims to deal with these challenges by enhancing the supply of seed of new varieties, and by improving the production and marketing of maize grain.

Grain and seed

As part of DONATA, the research institute has helped created 10 local innovation platforms in Mali's "maize belt", which runs across the southern part of the country. These platforms aim to make farmers aware of the new varieties, generate trust among stakeholders in the maize sector, and help farmers adopt the farming practices that will enable them to grow a good crop.

Each platform has about 30 actors, representing the major stakeholders in maize production and marketing: representatives of one or more (up to five) farmer cooperatives, along with traders, transporters, processors, millers, Faso Kaba (a seed company) and microfinance institutions. They also include local policymakers such as mayors and district authorities, the media, extension staff and researchers.

Photo: Geneviève Audet-Bélanger

Mali maize innovation platform products displayed at the Ouagadougou pre-writeshop

Three of the 10 platforms focus on **grain** production and marketing. The cooperatives represented on these platforms have an average of 80 farmers each. They buy seed and other inputs from Faso Kaba and produce grain that they sell to traders. The traders bulk the grain and sell it to a variety of large and small-scale processors, poultry growers and consumers.

The remaining seven platforms focus on producing and marketing maize **seed**. The cooperatives on these platforms are smaller, with around 30 farmers each. Faso Kaba supplies them with seed and other inputs on credit, then buys and certifies the seed they have produced. It sells this as certified seed to other producers throughout Mali and in neighbouring countries.

Farmers are often sceptical of risky new technologies: after all, their families' livelihoods depend on their ability to grow enough to eat. They want to see proof before they adopt a new variety. So the researchers and extensionists helped the farmers to field-test the new varieties on their own fields. These plots then served as demonstration sites where local people could compare the new varieties with the old.

The new varieties yield best if improved cultivation techniques are used. Planting in rows (rather than the traditional method of broadcasting handfuls of seed) makes weeding a lot easier later on in the growing season. The plants grow best if sown at the right density and if the correct amounts (and the right types) of fertilizer are applied at planting and a few weeks later, when the young plants are knee-high. Compost and manure also improve the soil structure and boost yields.

Creating linkages

The platforms discuss a range of issues concerning their focal areas: how to get seed, what cultivation techniques to use, how to get credit to pay for inputs, and how to market the grain. These discussions are facilitated by the extensionists and IER researchers (the person who acts as the DONATA focal point in Mali, and two to four of his colleagues with different types of expertise). They call and facilitate the meetings, invite suggestions for the agenda, and present information requested by the platform actors. The actors (including the local politicians) are treated as equals: everyone has the chance to speak, make suggestions, ask questions and provide information.

The focal point and the extensionists arrange for special training sessions on subjects identified by the platform actors – such as seed production, seed cleaning and sorting, negotiation skills and business planning.

One big advantage of the platform is that it enables the stakeholders to get to know each other. The cooperatives represented on the platform have been able to use these new links to negotiate deals. These deals may be bilateral or multilateral. An example of a bilateral arrangement is where the members of a seed cooperative undertake to supply seed to Faso Kaba. The seed company supplies the required inputs on credit and buys the seed from the farmers after the harvest. The farmers get a guaranteed income, and Faso Kaba gets an assured supply of certified seed to sell on to its customers. Because both parties are actors on the platform, they have come to know and trust each

Photo: Lassina Toure

Farmers dehusking maize in Mali.

other. Discussions about deals often begin during the platform meetings, and are concluded by the interested parties afterwards.

A multilateral agreement might involve a cooperative agreeing to sell grain to processor, with a microfinance institution offering credit so the farmers can buy the inputs they need. In reaching such agreements, the individual cooperatives negotiate on their own rather than as a group.

The platforms have also been useful for the IER researchers: it makes it easy for them to arrange field tests and demonstrations to speed up the development and dissemination of new technologies.

"Because my wife earned a lot producing maize seed, I also joined the platform. We've been a part of the platform ever since"

– A maize farmer in Kolokani

Getting in touch

The innovation platforms have put a lot of effort into building trust and spreading information about the new technologies. They have used various channels to do this. The focal point arranges exchange visits by groups of farmers to see the field tests and demonstration plots. The IER researchers produce posters and leaflets on the recommended technologies. The seed companies distribute the leaflets with each bag of seed they sell. The media representatives broadcast stories about the new technologies on community radio and television.

Box 3.1 Why does my seed weigh less?

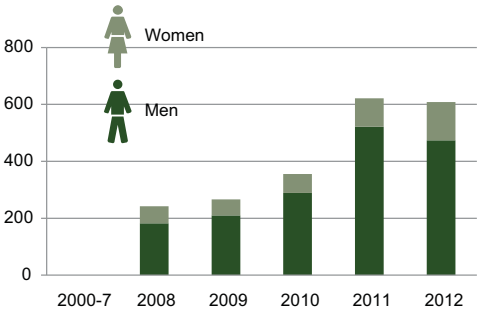
Walan Soumaila, a seed grower from Walan village, was frustrated. When he delivered seed to Faso Kaba, the seed company would pay him for less than he had delivered. The innovation platform arranged for him to visit the seed conditioning plant. He saw how his 10 tonnes of raw seed were weighed on arrival, how they went through the machines that removed the dust, broken grains and trash, and how a little more than 8 tonnes came out.

"Seeing is believing", he says. "The human hand cannot clean the seed that well." He now realizes the reasons for the apparent loss in weight, and is confident that the seed company is not trying to cheat him.

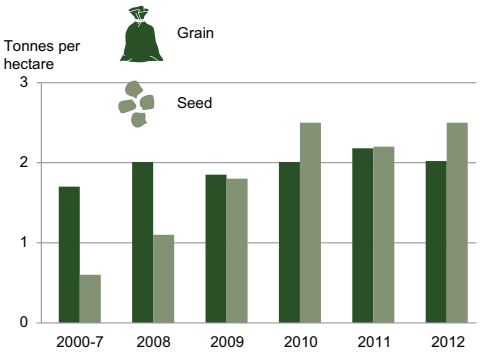
Mobile phones have proven a very valuable means of communication. They make it easy for farmers to ask questions and for the cooperative leaders to negotiate sales and arrange deliveries. The facilitators use their phones to arrange meetings and training sessions, and to get in touch with platform actors. The researchers, seed company and processors use the internet to obtain information and coordinate their activities.

Radio and television help reach a larger audience. The media representatives on the platforms broadcast stories about the new technologies on community radio and television. However, this publicity is expensive: it costs FCFA 150,000 ($300) to broadcast a 5-minute programme on television. Community radio is cheaper: a minute costs FCFA 1,000 ($2).

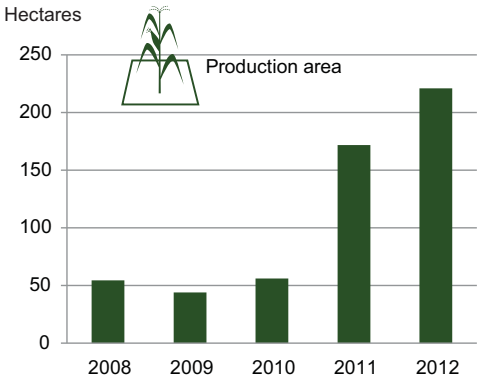
Trade fairs are another vehicle: two of the actors (a processors' cooperative in Bougouni and Faso Kaba) gain visibility for their work by taking part in such fairs.



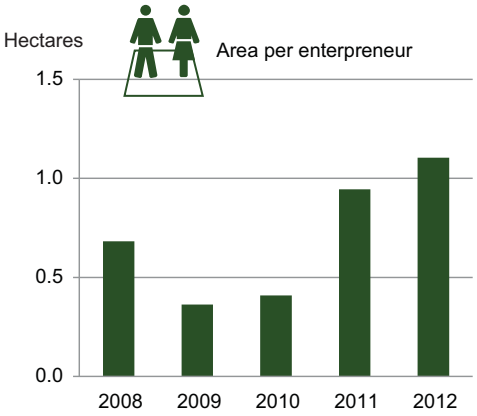
Number of beneficiaries



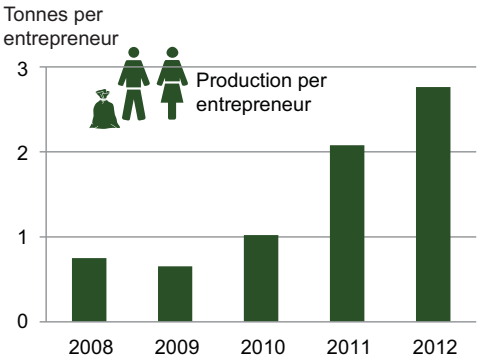
Average yield of innovation platform actors



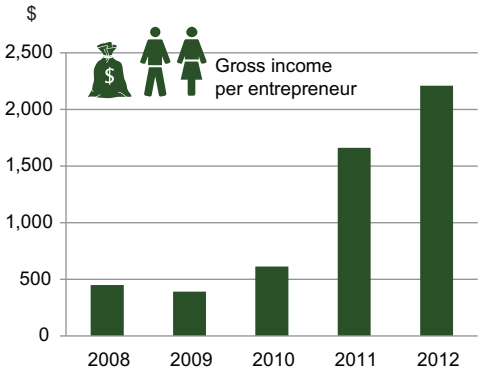
Total seed production area of innovation platform actors



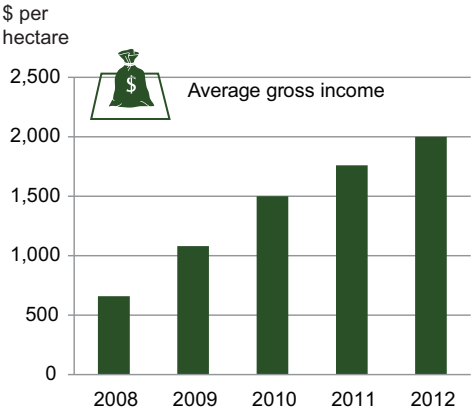
Average area of seed production per entrepreneur



Average production per entrepreneur



Average gross income per entrepreneur



Average gross income per hectare

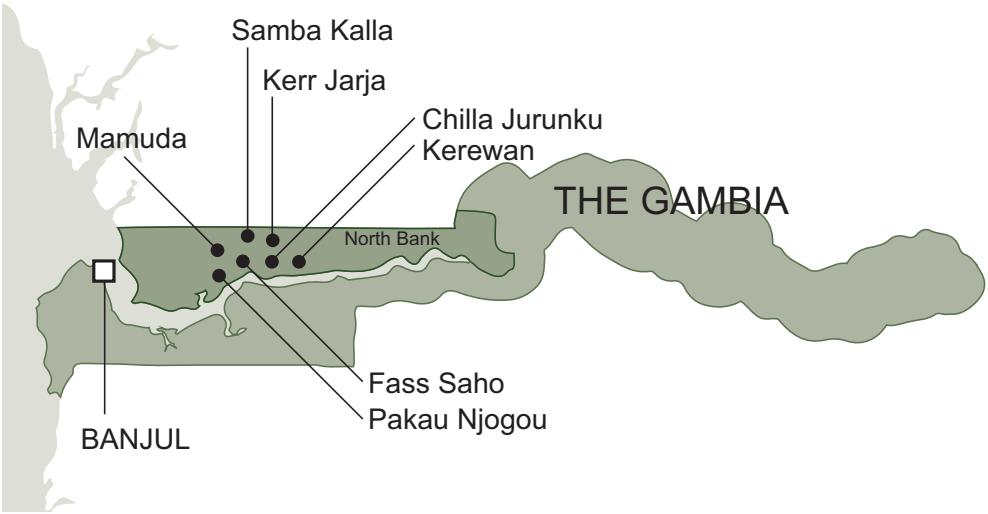
3.3 MAIZE IN THE GAMBIA: TACKLING CONSTRAINTS

Previous page: Handwritten labels of various maize products sold by women in the community, The Gambia.

Photo: Geneviève Audet-Bélanger

3.3 MAIZE IN THE GAMBIA: TACKLING CONSTRAINTS

Ansumana K Jarju, Mama M K Manneh, Saikou E Sanyang, Fatou Darboe and Sidi Sanyang



Entry points

Farmers' access to improved yellow maize varieties

Policy dialogue at regional level on maize value chain development

Maize grain processing and adding value

Platform stakeholders

Farmers: Produce and process maize grain

Traders: Purcchase grain

Poultry producers: Purchase grain for use as feed

National policymakers: Provide guidance, learn from platform activities

Regional agricultural directorate, North Bank Region: Advise on technology, facilitate platform

Entrepreneurs, processors: Process maize into grits and flour for sale

Transporters: Transport maize and processed products to market

Researchers: Initial facilitation of the platform; provide new varieties, facilitate access to agrochemicals, farm implements and technical backstopping *National Agricultural Research Institute, NARI*

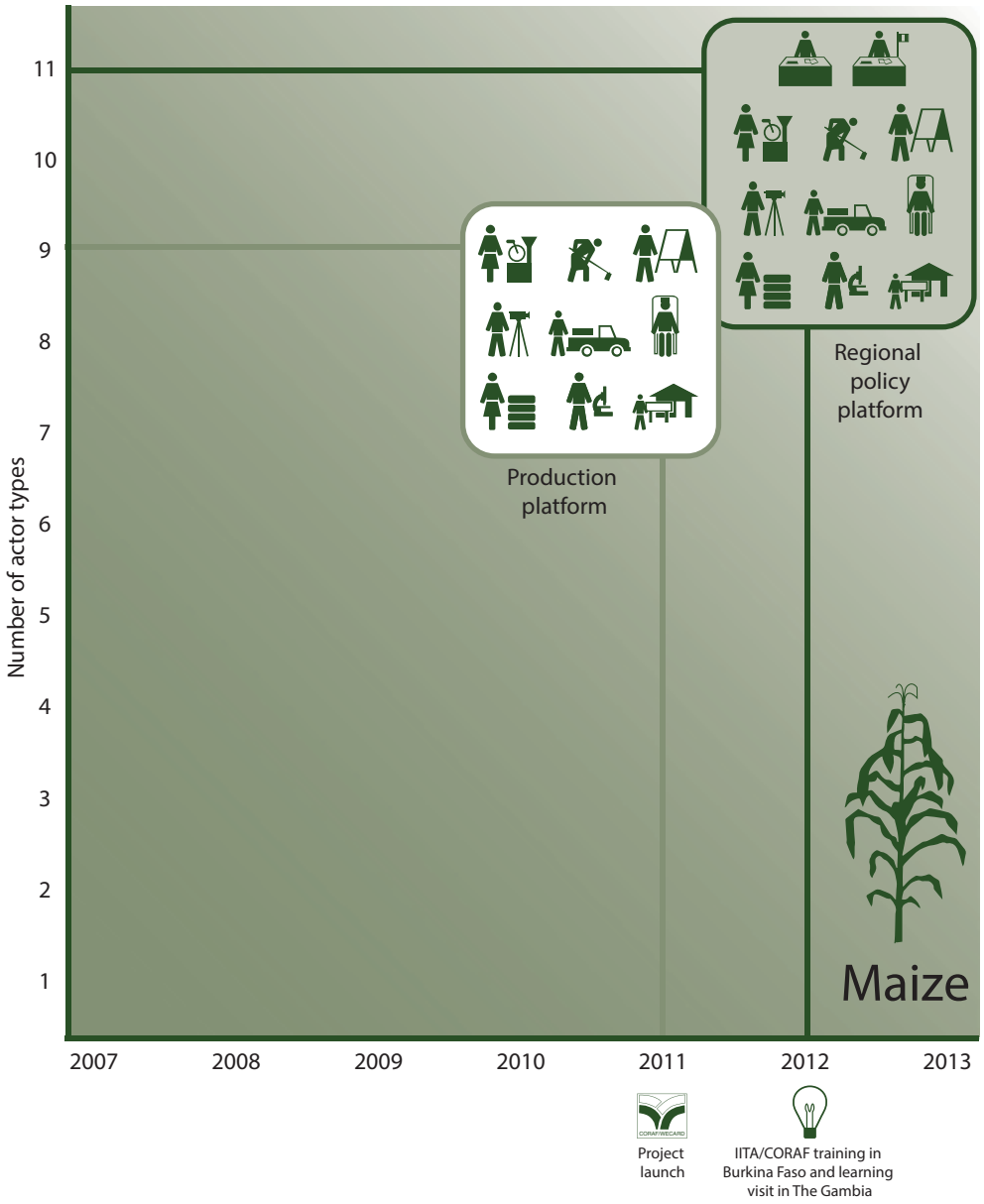
Extension: Disseminate improved production and postharvest practices

Food Technology Services: Train on postharvest handling and processing

Non-government organizations: Mobilize and train communities

Local policymakers: Chair platform meetings, encourage stakeholders to adopt new technologies

Media: Disseminate information via community radio, national television and print media


Number of actor types
11
10
9
8
7
6
5
4
3
2
1
2007
2008
2009
2010
2011
2012
2013
Production platform
Regional policy platform
Maize
Project launch
IITA/CORAF training in Burkina Faso and learning visit in The Gambia

Maize is an important crop in The Gambia, but efforts to boost production face several major problems. Soils in the country tend to be infertile and low in organic matter. Farmers plant low-yielding local varieties of white maize that take 120 days to mature, leaving them at risk of drought during the short and unreliable rainy season. Because yields are low, farmers consume most of what they grow, leaving little to sell. Their postharvest handling is poor, leading to high wastage and a low-quality product. A few sell fresh or roasted maize on the cob at local markets, but they are poorly organized for larger-scale marketing. In any case there are few commercial processors who handle the crop and turn it into flour and other types of food.

Bringing stakeholders together

A set of seven innovation platforms have been tackling these problems. Six of them are based in villages in the North Bank Region, one of the country's main maize-growing areas. A regional innovation platform, based in Kerewan, the regional capital, discusses policy-related issues and coordinates marketing.

The first step, in 2011, was for a team of researchers, extension workers and staff of non-government organizations to assess the country's agricultural production and marketing. This team suggested how the planned innovation platforms might be structured, and recommended that maize be the commodity focus (another major project was already dealing with rice, a more important staple grain). It identified key stakeholders in the maize sector.

The National Agricultural Research Institute then called a meeting of these stakeholders. This introduced them to the DONATA initiative and the idea of innovation platforms. The meeting chose the North Bank as the location for the initiative. Communities were selected that were easily accessible (so people could come to meetings) and had a good record of implementing development initiatives. In each location, the local stakeholders were identified: farmers who grow maize, traders, transporters, and processors (groups of women who buy dry grain and make grits or flour). These were invited to form an innovation platform, along with district chiefs and village heads, the regional governor, the community radio station and a freelance reporter, researchers, extension workers and local non-government organizations. Each innovation platform includes around 30 households in all.

Working together

Innovation platforms are a new approach, so it was necessary to explain how they would work. The stakeholders discussed their roles and responsibilities, decided what they wanted to do, and then started work.

The platforms offer training in the classroom and the field for farmers to learn about the new varieties and production techniques. Visits to other villages give the farmers a chance to see new methods for themselves and to exchange experiences with their colleagues. The platforms bring in outsiders to meet the actors and learn about their activities: potential investors, poultry farmers, mill owners, the national nutrition agency and staff of other development projects.

The governor of the North Bank region explains:

We interact and share experiences and knowledge. The other thing the project is doing very well is providing enough substantial motivation for farmers' involvement in the production of maize which has again its chain value in many forms. One is that it is making it possible for more and more people to go into alternative agricultural productions such as poultry.

– Governor Lamin Queen Jammoh

goo.gl/P1ypfq

Each of the external stakeholders in the platform has its own role. The researchers launch the platforms and provide seed of the improved varieties, facilitate access to agrochemicals and provide technical backstopping. Once the platform has been established, staff from the regional agricultural directorate take over the facilitation process. They also are responsible for disseminating improved practices. A non-government organization helps the community members get organized. Staff of Food Technology Services (part of the Department of Agriculture) train people in postharvest handling and processing. The reporters disseminate key outputs from the platforms and spread awareness of the new technologies and the platform approach.

Innovations in production and marketing

Discussions among the stakeholders identified the problems outlined in the introduction to this chapter. The platforms introduced a number of innovations to deal with them.

New varieties. Two new maize varieties, known as JEKA and DMR, have been introduced. These produce yellow grain, which tastes better than the traditional varieties, and is in more demand as both food and for poultry feed. They mature in just 80–95 days, so are more likely to avoid the risk of drought during the growing season. They are shorter than the traditional varieties, so are less likely to fall over during the storms that periodically sweep The Gambia. The DMR variety resists downy mildew, the most important disease of maize. With the right cultivation techniques, the new varieties can produce up to 4 tons of grain per hectare, compared to a maximum of just 2.5 t/ha for the local varieties (the national average yield is only 1.3 t/ha).

Before the DONATA, my yields were about 30 to 50 bags. With DONATA, I sometimes manage to get 150 bags, occasionally more.

– Momodou Jallow, trader/transporter, Samba Kalla

goo.gl/2K6rFE

Some of the farmers had already heard of these improved varieties, and they wanted to get seed and learn how to grow them.

Improving soil fertility Fertilizers are an obvious way to deal with the soil fertility problem. But they are expensive, and few farmers can afford to use the full recommended rate. Organic manure is an alternative source of nutrients:

The Gambia has a lot of livestock, and farmers apply manure on their fields, but they often use the wrong amounts and they do not incorporate it into the soil. The research institute helped the platforms organize trials to compare the new varieties with different fertilization rates. One-half of a field was given the full recommended fertilizer dose, while the other half got half this amount, plus 2.5 tons of manure per hectare (about 15 horse-cartloads). The two plots produced more or less the same amount of grain. The platforms organized field days for farmers to see this.

These trials and demonstrations convinced the farmers to adopt the new varieties and techniques. To get them started, the research institute supplied the farmers on the platforms with a one-time package of seed, fertilizer and implements, which resulted in increased yields; for the next season, the farmers had to produce their own seed and buy their own fertilizer. One interviewee was particularly pleased with how the farmers saved money to buy inputs for the coming year:

The committee agreed that we would save money from maize sales to buy fertilizer for the coming year. Each of us saved D10,000 to put towards buying fertilizer for the next year. When we ploughed our fields and applied fertilizer, we were very successful.

– Omar Drammeh, producer and facilitator of the Fass Omar Saho platform

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Harvesting and processing Growing a larger area of maize gives farmers a labour problem at harvest time. If they harvest the cobs, they have to take them home (which may be some distance away) and dehusk them and dry them in the sun. That takes work at a time of year when they have many other urgent tasks around the farm. It is better to simply cut the maize plants and stack them vertically in the fields and leave them for several weeks to dry. When the farmers have time, they can then come to remove the dried cobs. They chop the stover up to use as feed, or carry away the intact stems to use as fencing. This new technique has been introduced through the innovation platforms.

Photo: Geneviève Audet-Bélanger

Maize pancake – one of the many maize products processed by women in the innovation platform at Kerr Jarga, The Gambia

The researchers try to build on traditional knowledge where possible. It seems that harvesting during a new moon reduces pest infestation (insect life cycles are often tied to the phases of the moon). And mixing neem leaves or powder made from neem kernels reduces damage by storage pests. The platforms promote these and other tried-and-tested local techniques.

Each community in the project area has a government-supplied mill to process large grains such as maize and millet. Food Technology Services staff have taught women in each platform how to make a range of maize-based foods: couscous, traditional foods such as *benachin*, *mbahal* and *chakiri* (which are normally made with rice), soup, baby food and pancakes. Mariama Gaye explains that as a processor it is her role to make these products. She explains how these new products help people feed their families throughout the year, especially when rice is not available:

"Whenever we have a meal without maize, we don't feel like it is a proper meal. Maize is delicious and important for our wellbeing."

– Mariama Gaye, processor, Kerr Jarga platform

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Organizing for marketing Once they realized that they could grow enough to sell, the farmers in the individual community platforms agreed to market their grain collectively. It works like this: the platform coordinators ask each farmer how much of their grain they want to sell. The coordinators contact a buyer and negotiate a price and date for the trade. The farmers bring their sacks of grain to a central location for the buyer to pick up. Because the farmers are now offering high-quality yellow maize in bulk, they can demand a higher price: D25/kg (about $1) rather than the D10–18 they would get by selling white maize individually.

The women farmers have learned how to package maize flour and grits into standard 500 g or 1 kg bags. They hand-write labels showing the product name, its weight, the manufacturer, and the production and expiry dates. The women sell these products in the community and at the local weekly markets. They are exploring the possibility of printing these labels.

Influencing policy

In 2012, platform actors were beginning to cooperate on marketing. Facilitated by the NGO, farmers got organized in formalized farmers' associations, paying memberships fees. Initially, the membership was limited to farmers, but gradually, other value chain actors were engaged, including transporters and traders. To receive full attention of the local government, including the Regional Governor, the association transformed towards a regional policy dialogue innovation platform. Representatives of the six community platforms, along with other stakeholders, drew up a written constitution. This was necessary for the regional platform to get official recognition, to avoid conflicts, and to define the roles and responsibilities of the various stakeholders.

Box 3.2 Projects in The Gambia that have adopted the DONATA innovation platforms approach

- West Africa agricultural productivity programme (Ministry of Agriculture, funded by the World Bank).
- Regional project on sustainable management of endemic ruminant livestock (Ministry of Agriculture, funded by the African Development Bank)
- Regional project on sustainable crop–livestock integration project in The Gambia (AusAid)
- Food security for commercialization of agriculture (Food and Agriculture Organization, funded by the Italian government
- Food security through nutrition and crop production intensification and home-based school feeding programme (Food and Agriculture Organization and World Food Programme, funded by the European Union)
- Revitalizing the groundnut sub-sector (Voluntary Service Organization and local NGOs, funded by the World Bank)

A full-day consultative meeting was held in Kerewan, the regional capital, to establish this regional platform. The chiefs of all seven districts in the region attended, along with councillors, national assembly members and staff from the governor's office. The district chiefs showed their commitment to the platform by paying a membership fee. This higher-level platform serves as a link between the community platforms and the regional government.

goo.gl/WRGsAN

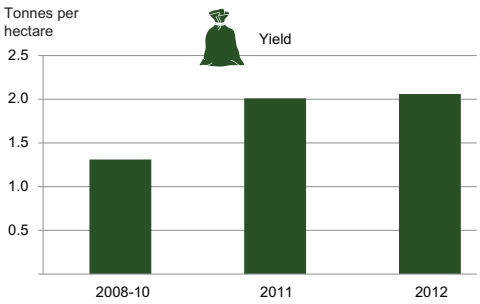
DONATA has also had a big influence on national government policy. Its approach of looking at several steps in the value chain and involving a range of stakeholders in identifying and solving problems fits in well with the government's agricultural agenda. Several projects have adopted the DONATA approach (Box 3.2).

The innovation platforms have taught the maize producers the value of working together, and they are beginning to apply these lessons to other crops too. In early 2013, for example, a group of groundnut growers – including some of the actors in the maize innovation platforms – came together to discuss problems in groundnut marketing. They lobbied the government to eliminate the Gambia Groundnut Council's monopoly on buying groundnut. This market liberalization led to an immediate doubling in price for groundnut from D650 per 70-kg bag to D1300 ($50).

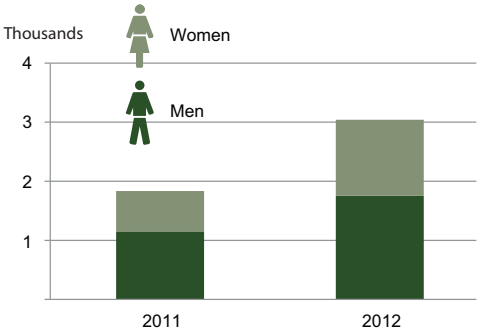
Towards the future

What will happen after DONATA ends? The stakeholders want the platforms to continue. They will be managed by the regional platform executive, supported by the community platforms. They now have a constitution to guide how they will operate. The farmers have agreed to contribute a total of 840 kg of grain each year into a fund for buying fertilizer. This transaction is handled at both community- and regional-level platforms. Each member of the platforms also pays a membership fee of D50. So far, a total of D60,000 ($2,100) has been raised from membership fees alone.

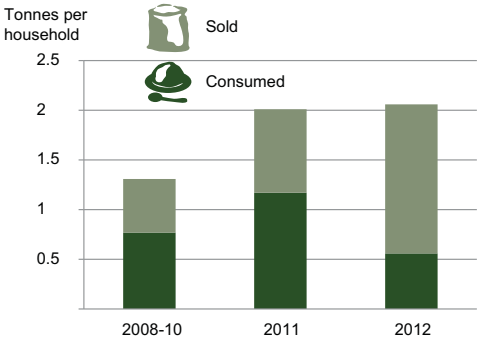
The innovation platform has taught the stakeholders the value of working together. They have a feeling of ownership for the platforms: they do not regard them as belonging to the research institute, DONATA, or the Department of Agriculture. They will mobilize their own funds through membership fees and by attracting private investors to invest in large-scale grain milling and marketing.



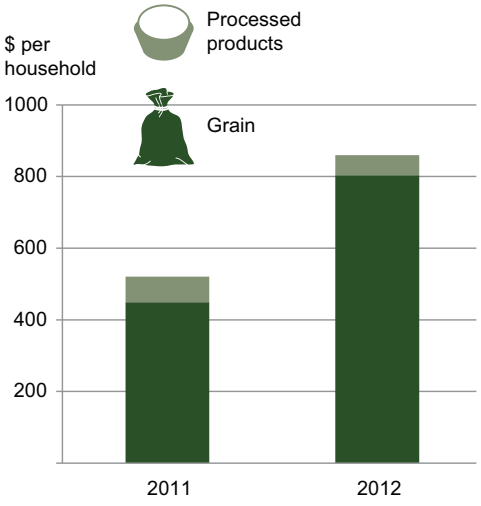
Average yield of the innovation platform actors



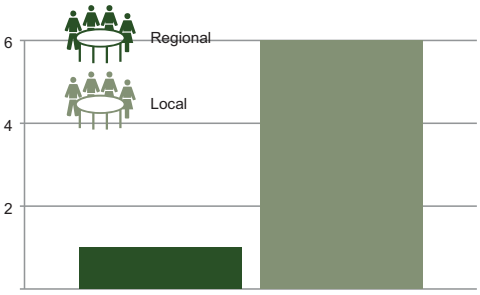
Number of beneficiaries



Average maize consumed and sold by innovation platform actors



Gross income from maise per household



Number of innovation platforms

4 CASSAVA IN WEST AND CENTRAL AFRICA: AN INTRODUCTION

Previous page: Cassava roots and stem cuttings from the Okola innovation platform in Cameroon.

Photo: Geneviève Audet-Bélanger

4 CASSAVA IN WEST AND CENTRAL AFRICA: AN INTRODUCTION

Rhiannon Pyburn

Cassava (*Manihot esculenta*) is a woody shrub originating in South America that is widely grown in tropical and subtropical regions for its edible, starchy tuberous roots. It is the third most important source of calories in the tropics, after rice and maize.[1] It is a major staple food in the developing world, with over half a billion people in Africa, Asia and Latin America depending on it for their basic diet and for their income (IFAD, no date).

While essentially a carbohydrate source, the roots are rich in calcium and vitamin C, and they contain a nutritionally significant quantity of thiamine, riboflavin and nicotinic acid. The roots contain little protein, but what there is has a good balance of essential amino acids. There are two types of varieties: bitter (which must be treated and prepared properly before it is eaten or fed to animals) and sweet (which needs less processing). The leaves can also be consumed as a green vegetable; they provide vitamins A and B, and are high in protein.

The roots have to be peeled and washed; they can then be processed in various ways: sliced, chipped, grated, mashed, fermented, dried, milled, boiled, roasted and fried. Flour or granules are known as tapioca; a fermented, flaky version is named *gari*.[2] Numerous food products exist, including fufu, a popular dish made from cassava flour. Much of the processing is done by small cottage industries owned by women (AFD et al. 2013:7). Cassava is also turned into high-quality starch and animal feed, and is also used to make paper and gum[3] and in other industrial applications.[4] Both small-scale and industrial processors use it to make alcohol.

Cassava is a highly productive crop: it can produce significantly more calories from a particular area of land in a year than other staple crops: over 250,000 calories/hectare/day, compared with 200,000 for maize, 176,000 for rice and 110,000 for wheat.

Box 4.1 Tuber or root?

Some people refer to the edible, starchy portions of a cassava plant as "tubers"; others call them "roots". Who is right?

Answer: both. Botanically speaking, cassava has tuberous roots: they are roots that are enlarged to function as a storage organ. Other crops that have similar organs are sweet potatoes (*Ipomoea batatas*) and yams (*Dioscorea* spp.).

Potato (*Solanum tuberosum*) plants have stem tubers: what we eat are the enlarged parts of underground stems, not roots.

1 www.fao.org/ag/agp/agpc/gcds/index_en.html
2 Source: wikipedia
3 See more at: http://tinyurl.com/nfkw9ts
4 http://tinyurl.com/pynd2k8 and www.fao.org/ag/agp/agpc/gcds/index_en.html

It is drought-tolerant, can be successfully grown on marginal soils, and gives reasonable yields where many other crops do not grow well. It is less sensitive to rain-related hazards than grain (AFD et al. 2013:79). It requires little or no fertilization, and maintains steady production over a fairly long period of continuous cropping.[1] The crop is well-adapted within latitudes 30° north and south of the equator, at elevations between sea level and 2,000 metres, in equatorial temperatures, with rainfalls of 50 to 5,000 millimetres a year, and to poor soils with a pH ranging from acidic to alkaline. This wide adaptability makes it a suitable crop for large parts of the tropics.

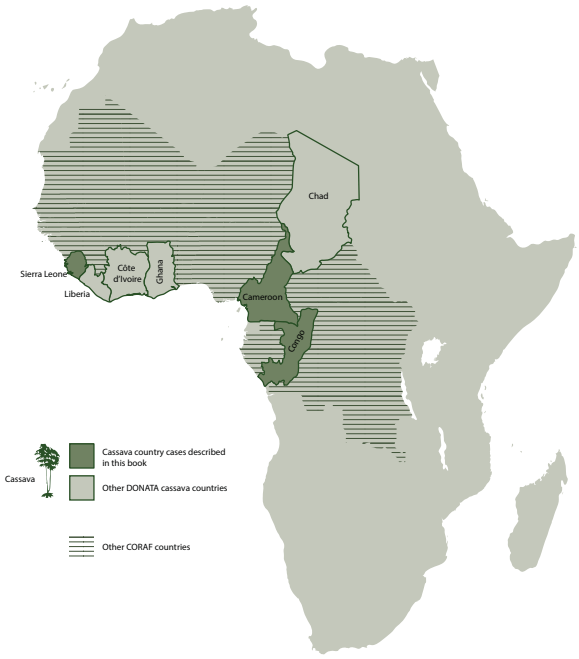


Figure 4.1 Countries focusing on cassava in DONATA

Consumed by about 500 million Africans every day, cassava is the second most important source of carbohydrate in sub-Saharan Africa, after maize. Sub-Saharan Africa produces more than 50 percent of the world's cassava output, mainly for subsistence. The continent's production has tripled since 1961 from 33 million tonnes per year to 119 million tonnes[2] in 2007.

In West and Central Africa, cassava is typically grown by poor farmers, many of them women, often on marginal land. It is said to provide a living for more than 40 million people in the region, mainly in rural areas (Baris 2009 cited in AFD et al. 2013:79). In Cameroon, cassava represents 70% of the total cultivated area and 46% of food crop production (Barry, no date). It is grown largely by poor smallholders and all around can be said to generate income for the poorest and most vulnerable populations (AFD et al. 2013:7). Short supply chains are in the hands of women (ibid): "cassava is women's cocoa" (Maman Douala, personal communication). In Sierra Leone, cassava is the second-most important crop after rice. It is used as a source of income by most cassava producers and processors; and, it is suitable for intercropping with rice in the country's upland region (Sesay, this book, Chapter 4.1).

But cassava is often seen as a "poor cousin" in the world's family of staple crops. Far less research and development have been devoted to cassava compared to rice, maize and wheat. This lack of scientific interest has contributed to highly uneven cultivation and processing methods, and cassava products that often are of poor quality.[3] Increases in production are mostly due to increased

1 Taye Babaleye, IITA, www.worldbank.org/html/cgiar/newsletter/Mar96/4cas2.html
2 From IITA website www.iita.org/cassava
3 www.fao.org/ag/agp/agpc/gcds/index_en.html

surface area rather than higher yields per hectare. And even where yields do increase, this does not necessarily translate into higher incomes (IFAD, no date). A key problem for cassava is the mosaic virus. National agricultural research institutes and the International Institute of Tropical Agriculture are leading efforts in the region to create a variety with resistance to this problem.

Cassava's potential as an income-earning crop has not been widely tapped. It is somewhat unsuited to industrial farming because it is usually propagated vegetatively from stem cuttings that do not store well and are costly to cut and handle. Vegetative reproduction also means the rate of multiplication of new, improved varieties is slow, retarding their adoption. Harvesting cassava is labour-intensive, and its roots are bulky and highly perishable. As a crop for poor farmers in marginal areas, cassava competes with cereals that are adapted to local conditions.

The crop is a low-cost investment in food security: cassava is one of the least expensive sources of calories in urban areas (AFD et al. 2013:79). Cities absorb 46% of the national supply of cassava and traditionally processed products (AFD et al. 2013:76). In Cameroon, 80% of urban households consume cassava on a daily basis (Barry, no date), and the share of urban consumption of cassava in Cameroon is 42% (in 2009). The equivalent figure for Sierra Leone was 21% (there are no data for the Republic of Congo, the other country featured in this chapter) (AFD et al. 2013:44). For inter-regional markets, the main hindrances for cassava for smallholders include postharvest processing and regional trade barriers.

The coordination of cassava value chains needs to be improved. This is a key area of intervention for the International Fund for Agricultural Development (IFAD), which works to better link cassava supply and demand, strengthen chain actor participation, increased the value added of processed cassava roots, and open up new markets. IFAD's main investments in cassava in West and Central Africa have been in Benin, Cameroon, Ghana and Nigeria (IFAD, no date).

Cassava is a priority supply chain for ECOWAS (AFD et al. 2013:75). The New Partnership for Africa's Development (NEPAD) also promotes cassava farming to reduce hunger (Madmombe 2006). Some of its strategies have been taken up by IFAD in its regional Cassava Processing and Marketing Initiative (Serpagli, no date).

The rest of this chapter looks at three cases from Sierra Leone, the Republic of Congo and Cameroon. Chapter 4.1 presents the experience of the **Sierra Leone Agricultural Research Institute**, with its headquarters based in Freetown. It captures some of the technical challenges of multiplication of cassava, the wide array of local products, as well as intriguing efforts to include more vulnerable social groups in this post-conflict nation. It also touches on policy.

Chapter 4.2 comes from the **Centre de Recherches Agronomiques de Loudima** in **Republic of Congo**. This case presents how the innovation platform dealt with the destructive mosaic virus, and how it convinced reluctant farmers to use resistant cuttings to avoid the disease. Food security is a centrepiece of this case: it describes how peanuts and cassava were brought together to make a filling, tasty and nutritious snack; this is being promoted locally, including for a school feeding-programme.

Chapter 4.3 is about innovation platforms in **Cameroon** initiated by the **Institute of Agricultural Research for Developmen**t. This case captures a gender dimension of cassava: it is a woman's crop – 90% of the small-scale producers and processors of roots in Cameroon are women (Barry, no date). The platforms there have a very high participation of women, but men still lead in making decisions. This case also has some interesting examples of how the added value can be managed, and of how to sell in bulk to serve larger buyers.

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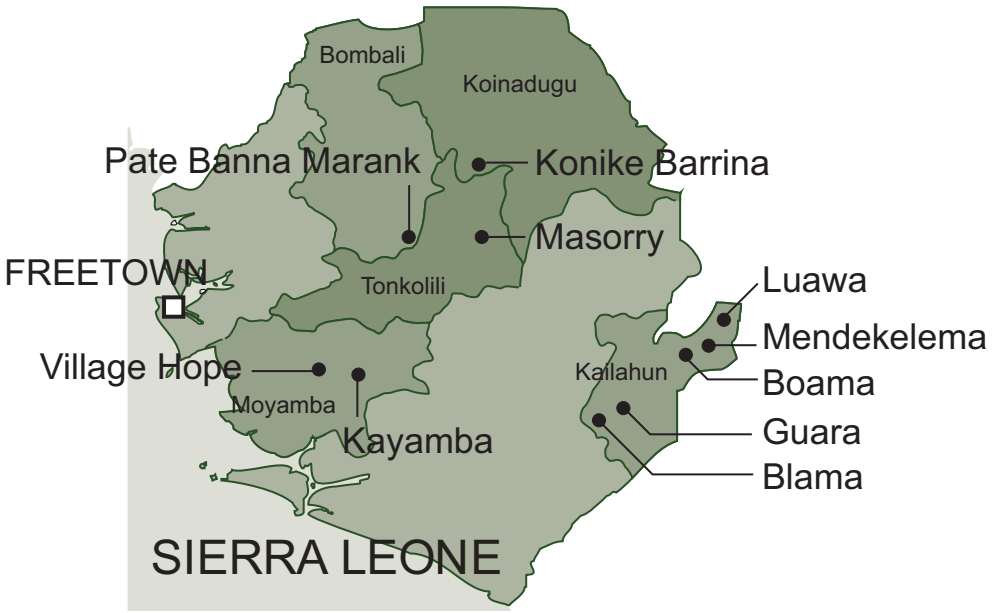
4.1 CASSAVA IN SIERRA LEONE: "PASS ME THE CASH"

Previous page: Storefront of the Binkolo Growth Centre.

Photo: Geneviève Audet-Bélanger

4.1 CASSAVA IN SIERRA LEONE: "PASS ME THE CASH"

Lansana Sesay, Alhaji Massaquoi, Sahr N Fomba, and Sidi Sanyang



Entry points

Farmers' access to improved cassava varieties

New product development and commercialization of locally processed cassava products

Innovation platform actors

Researchers: Facilitate platform, provide information, cuttings and initial fertilizer packages
Sierra Leone Agricultural Research Institute

Farmers' groups: Coordinate farmers' activities

Farmers: Grow and sell cassava cuttings and products
Members of farmer groups

Traders: Buy, bulk and sell cassava

Cassava processors: Transform cassava into many products, package and label

Transporters: Transport roots

Input dealers: Sell farm inputs

Blacksmiths: Make and repair simple farming tools

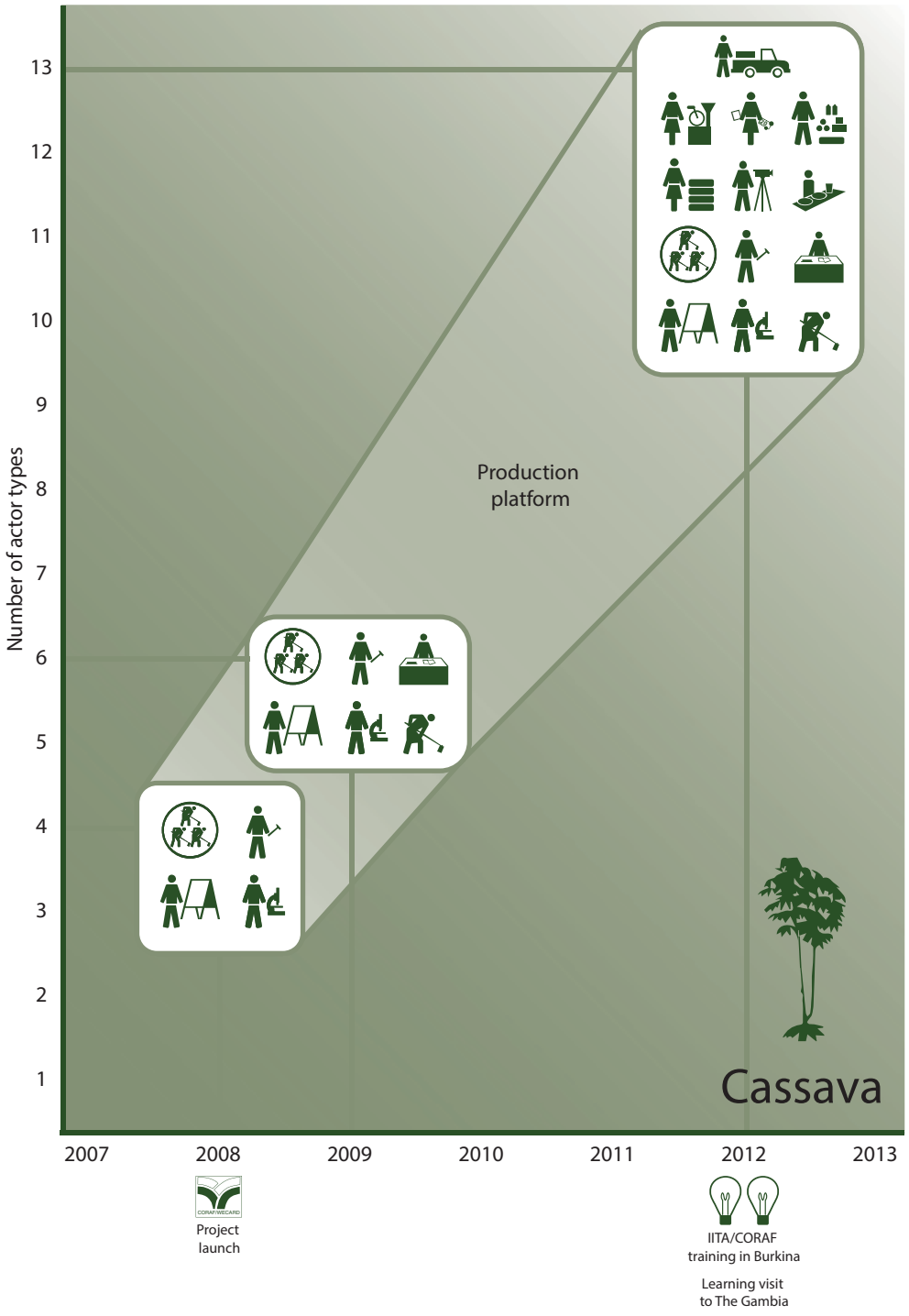
Retailers: Sell cassava products to consumers

Local councillors: Influence other stakeholders, liaise with local government

Extensionists: Organize and train farmers and processors
Ministry of Agriculture

Microfinance institution: Arrange credit for farmers, processors and traders

Radio reporter: Conduct interviews, produce radio programmes on cassava and disseminate information about Innovation platform activities


Number of actor types
13
12
11
10
9
8
7
6
5
4
3
2
1
Production platform
Cassava
2007
2008
2009
2010
2011
2012
2013
Project launch
IITA/CORAF training in Burkina
Learning visit to The Gambia

The most important staple crop in Sierra Leone is rice: it gets the lion's share of attention from everyone – farmers, the government, research and extension. Cassava is also an important staple, but it comes a distant second. It is best to plant cassava in the rainy season, but that is when farmers are busy tending to their rice crop. So they often plant cassava only in the dry season (in the Northern Region), when it grows slowly and is easily attacked by grasshoppers. In addition, local cassava varieties are susceptible to a string of other pests and diseases: mealybugs, green mites, mosaic virus, bacterial blight and brown spot.

The Sierra Leone Agricultural Research Institute has developed six varieties that resist or tolerate these problems. But getting them out to farmers has been a problem. This is partly because of the way cassava is multiplied: it is propagated from cuttings rather than seed, and each parent plant can produce only five to ten cuttings in a year. So it takes a long time to get enough cuttings to plant a whole field. The weakness of research–extension linkages also plays a part: there are few qualified extension personnel, they lack transport, and they have poor ties with research. Farmers are organized into groups to produce and market rice, but not cassava. As a result, only a few farmers planted the new varieties on land close to the research station.

One cassava grower explains the situation before the innovation platform started work:

> *Researchers spent time researching […] without much of the required results.*
>
> *– Muskuda Jalloh, cassava grower, Makeni platform, and coordinator, producer federation of Bombali District*

For Ms Jalloh and many other cassava producers, research was clearly not performing.

Propagating from cuttings

DONATA's approach has been rather like the multiplication of cassava cuttings: planting virtual "cuttings" and allowing them to grow, then repeating this at each level until there are enough to grow a commercial crop. The first such "cutting" to be planted was an introductory forum in 2008, which brought together various national stakeholders to discuss the problems and opportunities in cassava. This selected two parts of the country, the Eastern and Northern Regions, for DONATA to focus its efforts. Regional-level forums followed, which identified those communities where innovation platforms should be launched. Meetings were then held in each community with interested farmers to discuss the approach and agree on a strategy.

The platform facilitators helped the farmers get organized into cassava-grower groups, modelled on the rice-farming groups that already existed in the area. Each group has 100–150 participants, who coordinate their planting and harvesting activities. The research institute supplied these groups with (real!) cuttings of the improved cassava varieties developed by the research institute, and taught them how to multiply them. The traditional multiplication

technique uses cuttings about 30 cm long. The researchers introduced a new technique that uses cuttings that are only 5–10 cm long. These short cuttings have only two or three nodes from which the new plant can sprout. That makes it possible to make up to 20 cuttings from each parent plant, rather than just five. The resulting plants are ready to be chopped up into more cuttings after only six months, rather than the usual twelve. That greatly speeds up the multiplication of planting materials.

The innovation platforms devoted the first two years to multiplying the planting materials. The researchers and extension staff on the platform provided the initial cuttings to the farmers, and trained them how to use improved cultural practices: planting on continuous ridges (rather than on the traditional mounds), applying fertilizer and green manure, using the correct plant spacing, and planting at the start of the rains to avoid grasshopper attacks later in the season. They also trained them how to identify pests and diseases and how to avoid using susceptible varieties. The farmers kept some of the planting materials to multiply further, and sold some to non-government organizations and the Ministry of Agriculture. Other farmers could get a supply of cuttings free in return for their labour. Individuals in the group started their own plots to multiply planting materials. The platforms made it possible to create these linkages.

Makeup of the platforms

Each innovation platform includes a range of actors with different functions. Between three and five groups of cassava producers are represented on each platform. Up to four people from each group attend platform meetings: their chairperson, secretary, public relations officer and treasurer (though anyone else from the group is also welcome to attend). Other actors include the chairperson of the processing centre, representatives of the traders and input dealers, transporters. Service providers of the innovation platform include local councillors, researchers, extensionists, microfinance institute staff, and a reporter from the community radio station. Each platform meets about once a month. The platform is facilitated by one of the researchers. The constituent groups (such as the farmers' groups or the traders' association) also meet separately to report back and discuss issues as required.

The innovation platforms in the Eastern and Northern Regions were launched in 2008. In 2011, another two platforms were established in the Southern Region, making 10 platforms in all. In each region, a coordinating body meets several times a year to deal with common issues. This body includes one delegate from each farmer group, and one representative of each of the other stakeholders (processors, traders, transporters, service providers, researchers, etc.).

Adding marketing and processing to the mix

So far, the platforms had focused on producing cuttings. This can be an attractive business for a certain number of farmers. But the main purpose of cassava

production is to grow and sell the roots (which are turned into a whole range of products) and leaves (which are used as a vegetable). Marketing and processing are important because the new varieties do not get soft like mealy varieties: they cannot simply be boiled and eaten. Instead, they have to be turned into flour and other products. That requires several processing steps.

At a DONATA training in Ouagadougou in 2012, the platform facilitators realized the need to broaden their work to deal with marketing issues too. The platforms invited input dealers, the owners of processing centres and the media to join them to work on this.

Nine of the innovation platforms are linked with privately owned processing centres in their districts. Five of these are mobile: the owner carries the equipment around on a pickup to where it is needed. The farmer group in the tenth platform, in Masorry, got funding from a development project to build its own processing centre with a grater, press and other equipment. Lorries or tractors (owned by the transporters on the platform) pick up the newly harvested cassava and bring it to this centre. Ms Jalloh explains how she organizes the transport and the processing of her cassava:

Now with the innovation platform after production we just call one of the actors, maybe the processors, we say "Please we have our cassava ready, come" – they come. Then we must call the transporters. "Please we want to transport our cassava to the processing centre" – they come.

– Muskuda Jalloh, cassava grower, Makeni platform, and coordinator, producer federation of Bombali District

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To sell her cassava she simply says, "Pass me the cash". The direct contacts with other actors in the platform facilitate interactions and doing business.

The processing centres take the raw roots, peel and wash them, and then turn them into a range of products:

- ***Gari*** The roots are grated, pressed, roasted, packaged and labelled. Blending *gari* with flour made from soybeans and cowpeas increases its protein content and makes it more nutritious.
- **Starch** The grated roots are soaked to remove the cyanide they naturally contain, strained, squeezed, sun-dried and packaged.
- **Flour** The roots are chopped into chips, which are dried and then are ground into flour, packaged and labelled. This is used to make fufu (a staple food in much of West Africa). It is also blended with wheat flour to make bread and cakes.
- **Livestock feed** The cassava peelings are sold to farmers for use as pig feed. Pellets made from cassava can be used as poultry feed.
- **Dried leaf powder** leaves are dried and milled, then packaged in plastic sachets for sale.

The farmers supply their roots to the centres, which turn them into these products and sell them to traders. The processor is then able to pay the farmers. The prices are agreed by the innovation platform. They are set at 5% **below** the current market price for cassava. Why? To ensure that the farmers can sell all

Photo: Geneviève Audet-Bélanger

Milled cassava leaves packaged for sale at the Binkolo Growth Centre in Makeni district, Sierra Leone. A product of the innovation platform.

their output to the processor, and to ensure that the processor can also sell its entire inventory of products. This avoids the common problem of farmers being unable to sell their roots because of a lack of a market: it is better for them to sell all they want at a slightly lower price, than to be left with unsellable cassava still in the fields, or even worse, newly harvested cassava that rots by the roadside.

Mobile phones are the communication workhorses of the platforms: they allow rapid information exchange and coordination. The reporters on the platforms talk to farmers and other stakeholders, collect information on technologies, events and prices, and broadcast them on the local radio. That means both farmers and traders know what the current price is. The FARA Regional Agricultural Information and Learning System (RAILS) publicizes DONATA activities both within Sierra Leone and internationally.

Gender equity and inclusion

Men and women in the innovation platforms share the tasks of growing cassava. The men hoe the soil into ridges, into which the women plant the cuttings. Both weed the plot. At harvesting time, the men dig out the roots, while the women collect them and load them into bags to take to the processing centre. There, the women peel and wash the roots, while men operate the grating machine and the press that squeezes out the pulp, which both men and women roast to make *gari*. Men and women have equal opportunities to learn about production, processing and marketing.

Each group of cassava growers elects a committee through a secret ballot. Both men and women stand for election. Women have won the positions of vice-chair and treasurer in most of the platforms.

Polio has been nearly eradicated worldwide, but villages in Sierra Leone still have quite a few people who suffered from the disease as children. Their limited mobility means they cannot work in the fields – even though, as Ismail Bangura, the owner of the processing plant, says, "disability does not mean inability". These people often work as blacksmiths – a profession that they can practise without

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having to move around. They fabricate tools for the farmers on the innovation platforms, and have trained other, non-handicapped people to do so.

The platforms also have found productive work for a number of blind people in the community. They sell products from the processing centres to consumers. Through these activities and their participation in the platform, both blacksmiths and blind people have gained recognition and respect: they know they can speak up in meetings and be listened to.

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Sustainability

What happens when the DONATA ends? How sustainable are the innovation platforms? As it the case in here, we can be reasonably confident that they will continue, for several reasons.

Technologies and markets The project has introduced a range of improved technologies that platform actors find useful and profitable. These include the rapid multiplication of cuttings, the improved varieties, the new cultivation techniques, the use of mobile processing units, the new blended food products, and livestock feed. The increased yields and new products have made it possible to serve new markets.

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Policy and support for the initiative The Sierra Leone government and donors have been impressed by the work of DONATA, and have decided to adopt the innovation platforms model in the new West Africa Agricultural Productivity Programme, funded by the World Bank and the Japan International Cooperation Agency. This will continue to work with the ten innovation platforms established under the DONATA, and will expand the approach to cover rice as well as cassava.

> *We are in the process of starting the WAAPP. We have met and agreed that for technology generation and dissemination in the implementation of WAAPP we will go along the innovation platform and that in innovation platforms we are going to have all key stakeholders, we will be dealing with rice and cassava and for the cassava we are going to have all the key players from the researchers to extension agents and all other stakeholders along the value chain up to the market.*

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– Jackariawo Ahmed Jalloh, assistant director of extension – field operations, Ministry of Agriculture, Forestry and Food Security

Relationships A major benefit of the platforms has been to bring different stakeholders together to solve common problems. They can learn from each other: for example, the processors have learned how to blend cassava with soybean and cowpea flour, producing a more nutritious and more valuable product. By working together, each actor in the value chain can focus on its own speciality: production, processing, marketing, etc. That is more efficient and profitable for

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all. These linkages will continue to function into the future. Publicity generated through the local media and the RAILS project has raised awareness and demand for the new products.

Institutional development The regional coordinating bodies will continue to operate after the end of DONATA. Their constituent stakeholder groups have agreed to support them. Each group covers the costs of its representatives.

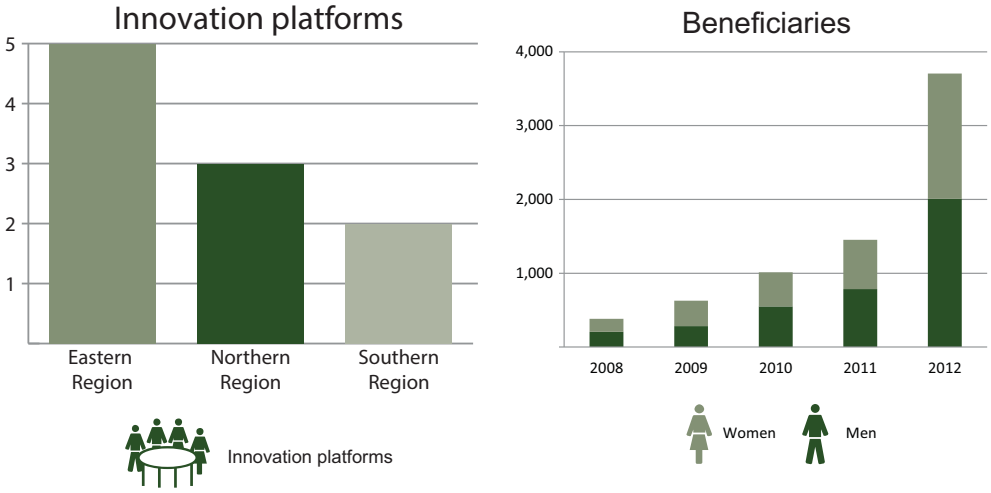
Policy pathways

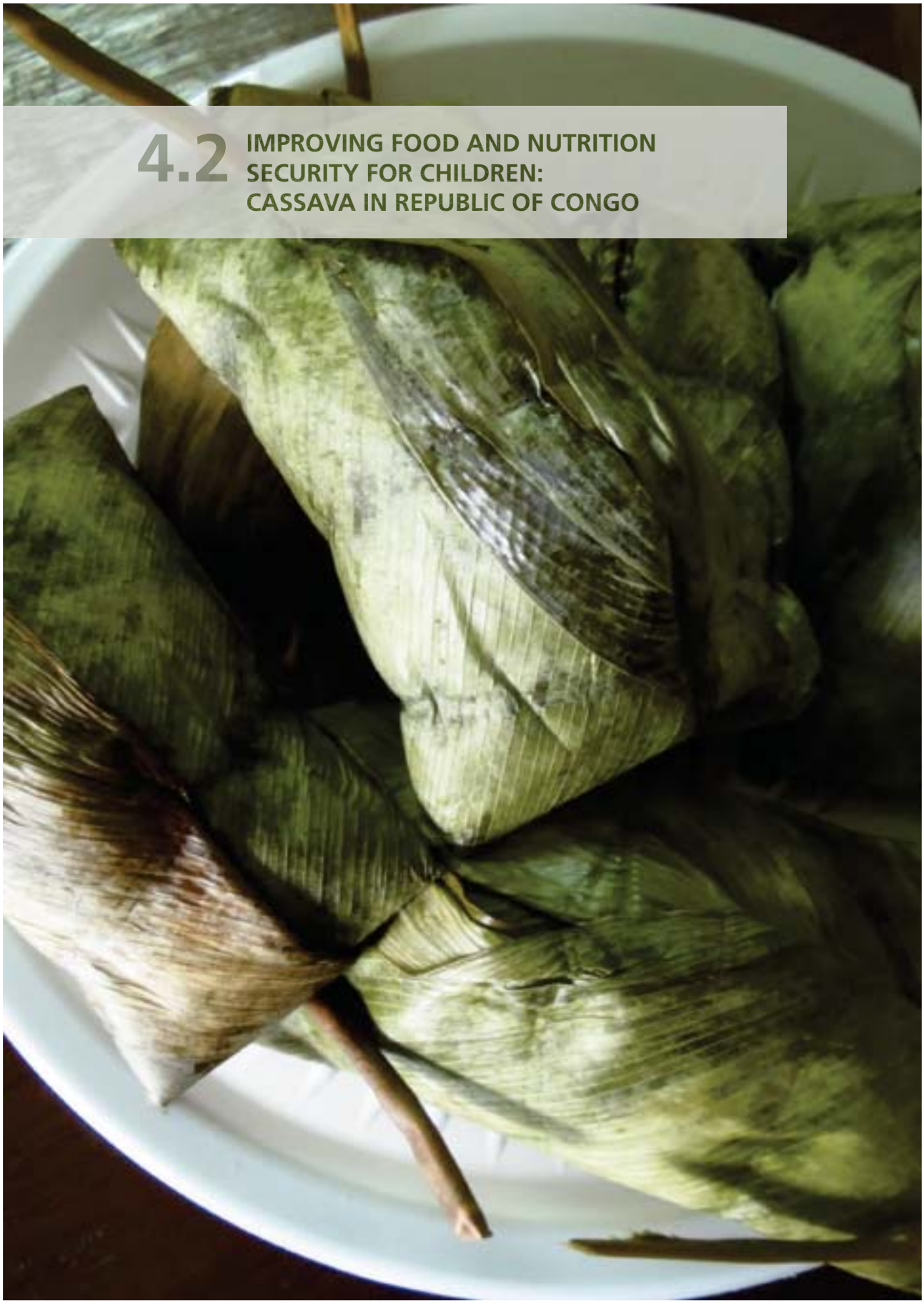
The innovation platforms have both influenced and been influenced by national and local government policies.

Cassava processors in Sierra Leone have been lobbying the government to include cassava flour in bread. The innovation platforms have demonstrated that it is possible to produce the volume and quality of cassava flour required. The processors involved in the platforms have proposed to the Ministry of Trade that bakers be allowed to include up to 5% cassava in the flour they use.

The innovation platforms have resulted in a big increase in cassava output in the areas where they operate. But local grazing practices endanger this: free-ranging cattle sometimes break into cassava fields and damage the crop. The local authorities have decided to fine the cattle owners to force them to control their animals.

The government encourages microfinance institutions to loan money to rural people. This has made it possible for cassava farmers, processors and traders to get credit to pay for inputs and equipment, and to finance processing and marketing. That has led to higher production and better quality products.





4.2 IMPROVING FOOD AND NUTRITION SECURITY FOR CHILDREN: CASSAVA IN REPUBLIC OF CONGO

Previous page: Mbala-pinda – ready to eat!

Photo: Geneviève Audet-Bélanger

4.2 IMPROVING FOOD AND NUTRITION SECURITY FOR CHILDREN: CASSAVA IN REPUBLIC OF CONGO

Stev Mapangou Divassa, Thomas Claude Miyouna, Moundzeo Lambert and Sidi Sanyang

Entry points

Farmers' access to improved cassava varieties

Processing and adding value to locally processed cassava products

Platform stakeholders

Researchers: Develop and make available new farming technologies
Centre de Recherches Agronomiques de Loudima, CRAL

Extension: Organize farmers and processors, advise them on new technologies
Ministry of Agriculture

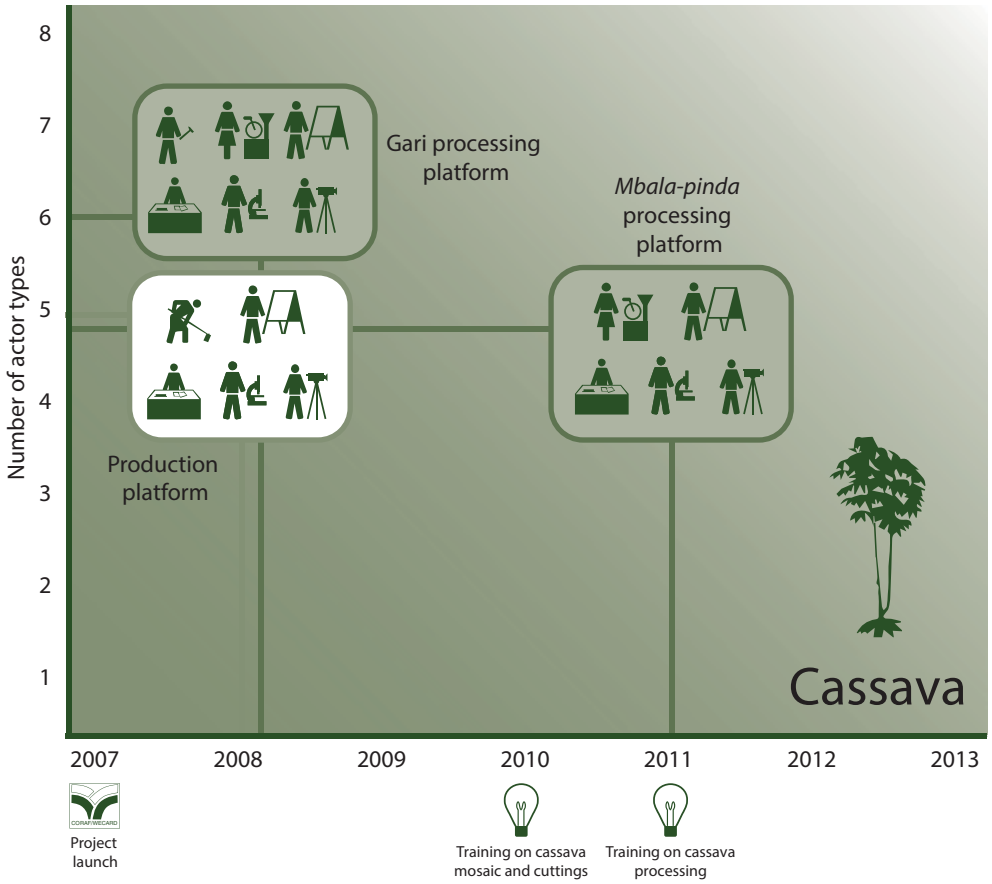
Farmers: Grow and market cassava

Processors: Convert cassava into various processed products

Mechanic: Make farm production and processing equipment

Media representatives: Collect and disseminate information on cassava production and processing

Local government: Make the activities of the platform possible


Number of actor types
8
7
6
5
4
3
2
1
Gari processing platform
Mbala-pinda processing platform
Production platform
Cassava
2007
2008
2009
2010
2011
2012
2013
Project launch
Training on cassava mosaic and cuttings
Training on cassava processing

The symptoms vary: the cassava plants may seem to be growing well, but then the leaves start to get yellow patches, and some are small and withered. The bad news comes at harvest time: the roots are short and spindly. A field of cassava may yield nothing at all.

The problem? Cassava mosaic, the most important disease of cassava in Republic of Congo (and much of the rest of Africa). Because cassava is such an important staple, outbreaks of the disease can cause serious food shortages across much of the continent. It is a serious threat to the lives and livelihoods of the Republic of Congo's farmers (of whom 70% are women). The virus is spread by whiteflies and through infected cuttings: when farmers plant infected cuttings from the previous year's crop, they inadvertently spread the disease.

One way to control the disease is to use resistant clones. The International Institute of Tropical Agriculture in Nigeria has developed several such clones which yield up to 30 t/ha. Five of these have been tested by the Centre de Recherches Agronomiques de Loudima (CRAL), the research institute responsible for cassava in Republic of Congo.

Getting cuttings to farmers

Getting these clones out to farmers has been a problem, though. The farmers are not organized, so no groups exist that can be used to disseminate the resistant cuttings or facilitate learning among farmers how to keep their fields clear of the disease. Indeed, the Republic of Congo has a history of cooperatives that did not function well, so farmers are justifiably suspicious of suggestions that they should work together.

The Loudima research centre has been using three main approaches to distribute the new varieties. First, it is working with the Centre National des Semences Améliorées (the national seed multiplication centre) to multiply and distribute cuttings. But this is managed by a different ministry, so coordination is a problem, and farmers who want to plant the new varieties often cannot get them. Second, it provides planting materials to agricultural development projects in various parts of the country. And third, it is working with three innovation platforms in the south of the country. These innovation platforms are the focus of this chapter.

Platforms for production…

The idea of innovation platforms was planted in the Republic of Congo at a national workshop in 2008, when representatives of all the stakeholders in the cassava sector met to discuss issues affecting the crop. This workshop chose three villages to host the innovation platforms. Work on the ground started in the same year with demonstration plots to compare the local varieties with the improved clones. Local farmers could see the difference between the plants, and asked how they could produce the new varieties. The researchers from the Loudima centre helped interested farmers to form a platform in each village.

The core of the platform is a group of about 50 farmers (around one-fifth of them women). Some of the farmers also act as traders, buying roots from their

neighbours and selling them at the local market. Other local actors involved include a mechanic who makes handcarts to transport the roots from the field to the market, and one or two small-scale entrepreneurs who process the roots. They are supported by an extension worker, researchers from the Loudima centre, and a reporter from the local radio or television station.

… and for processing

In addition, two innovation platforms deal with processing cassava. One of these, founded in 2008, is located in Ndounga. It is centred on an association of 35 young cassava processors (11 women and 24 men) in this area which has existed for over 10 years. These processors buy raw cassava roots, peel and grate them, put them in a porous bag and allow them to ferment for a couple of days. Weights on the bag press the water out. The contents are then roasted to produce *gari*, a granular product that can be stored for a long time and is used in many recipes.

DONATA has provided this group with a mechanical grater and a press to reduce the amount of drudgery and to make their production more efficient. This equipment has enabled the group to double its income. Apart from the processors, the platform includes an extension worker, an equipment maker and someone from the media.

The second processing group, in Loudima, makes *mbala-pinda*, a popular snack made from peanuts and cassava. The 33 women farmers in the group grow both these ingredients. They used to make the product individually, but now work together in a group. They have pooled their savings to buy an electric grinder. Once or twice a week, they meet at the house of the group chairwoman, where they grind their peanuts into a paste. They peel cassava and soak it for a week, allowing it to ferment. They press the resulting soft roots into a dough, which they then mix with the peanut paste. They wrap this mixture in arrowroot leaves, which they boil to make *mbala-pinda*.

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The platform has enabled these women to get organized to work together, produce more, and sell as a group in the market in Loudima. They are hoping to supply a school feeding-programme with *mbala-pinda*, to replace the imported maize meal that the programme currently uses.

Coordinating the platforms

A total of about 260 farmers and processors now belong to the five platforms. Each platform has a three-person committee: a chairperson, a vice-chair and a secretary. The chair and vice-chair are farmers or processors who are elected by the actors. The local extension worker acts as the platform secretary and facilitator, and liaises with researchers and other outsiders. The platform actors discuss each issue before making decisions by consensus.

Compared to some of the other countries in DONATA, the innovation platforms in the Republic of Congo are still at an experimental stage. Both the production and processing platforms face challenges in marketing. One

Photo: Geneviève Audet-Bélanger

Ingredients for mbala-pinda – groundnuts and peeled cassava, Loudima innovation platform 2

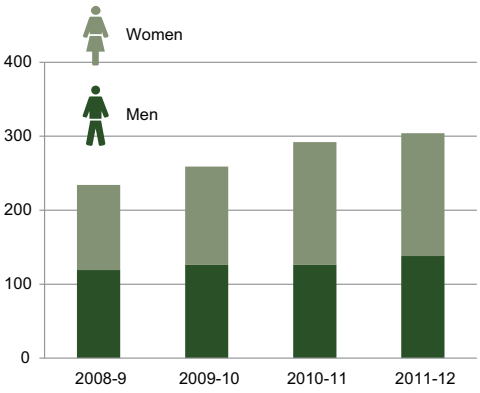
possibility is to involve other stakeholders in the cassava value chain, such as traders, entrepreneurs and larger-scale processors.

Spreading the news

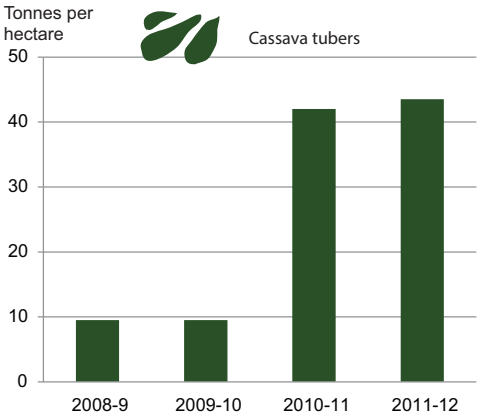
A reporter from a local private television station is part of the two innovation platforms in Loudima (production and processing). He interviews the actors and shoots footage of their work, and produces short documentaries that are broadcast on the station and used in training sessions. Programmes cover the whole range from field to plate: the choice of cuttings, planting and cultivation techniques, processing methods, and cooking recipes.

The platform actors also take part in field visits, training and workshops to learn new techniques.

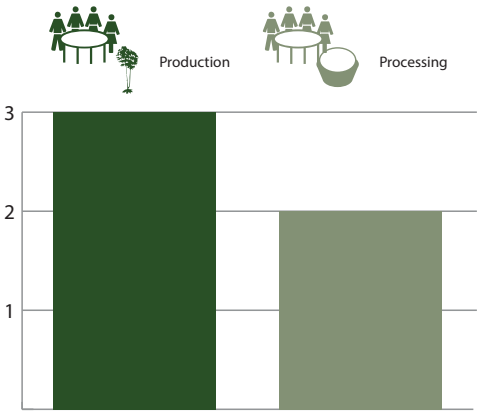
Information about the innovation platforms is distributed via the Regional Agricultural Information and Learning System (RAILS), a component of the PSTAD project managed by CORAF/WECARD, that produced films, posters, flyers and extension materials.



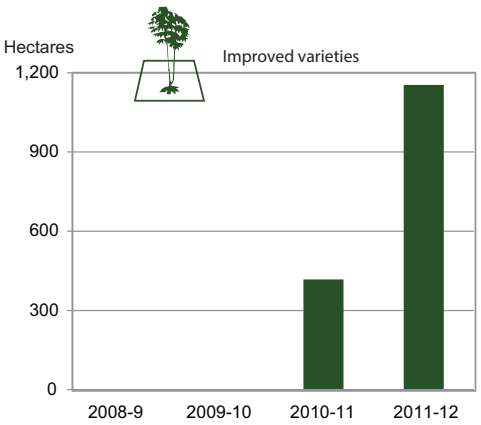
Number of beneficiaries of the innovation platforms



Average cassava tuber yield of innovation platform actors



Number of innovation platforms



Total area of improved cassava varieties of innovation platform actors

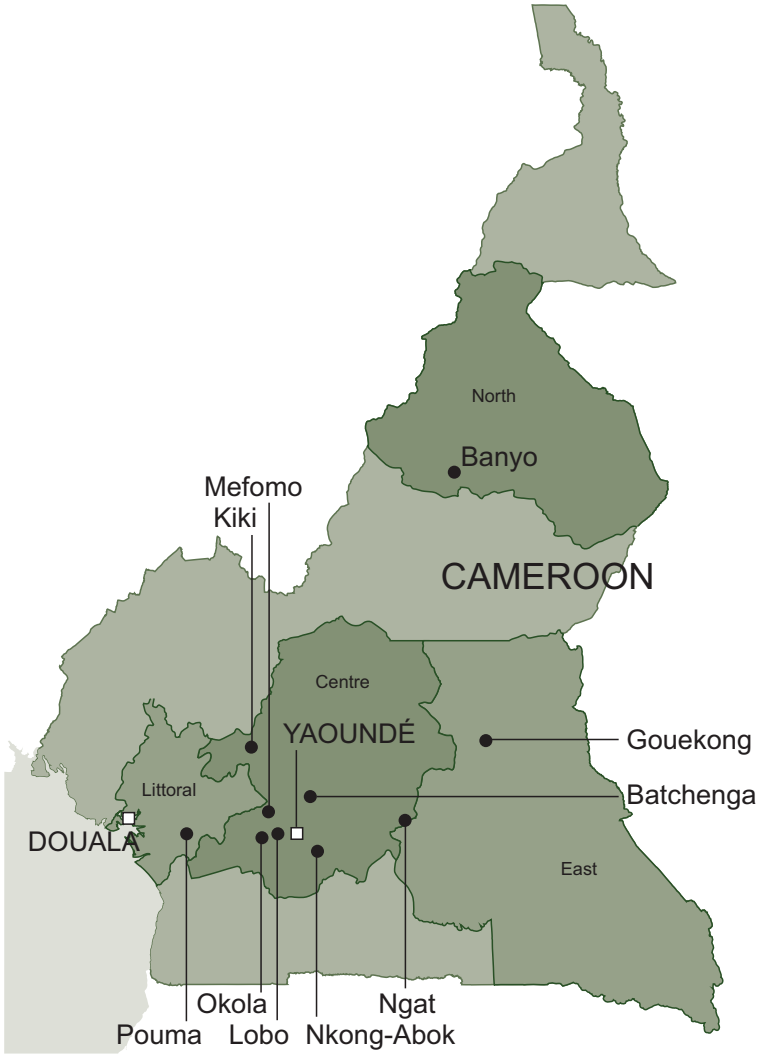
4.3 "WOMEN'S COCOA": CASSAVA IN CAMEROON

Previous page: Nutritious cassava leaves bound for sale at the Okola innovation platform in Cameroon.

Photo: Geneviève Audet-Bélanger

4.3 "WOMEN'S COCOA": CASSAVA IN CAMEROON

Onguene Awana Nérée, Minsili Hélène ("Maman Douala") épse Ondobo and Sidi Sanyang



Entry points

Farmers' access to improved cassava varieties

Processing and adding value to cassava products

Innovation platform actors

Farmers: Grow, process and sell cassava

Village chief: Confer authority, mediate conflicts, provide moral support

Religious leaders: Provide logistical support, land for field tests, mediation, moral and logistical support

Traders: Buy and sell cassava roots and process products

Processors: Buy, process and sell processed products

Researchers: Coordinate, facilitate, plan, train, experiment, monitor and evaluate, communicate results
Institut de Recherche Agricole pour le Développement (IRAD) and University of Yaoundé II

Extension workers: Facilitate, train, advise and support

Transporters: Transport roots and processed products

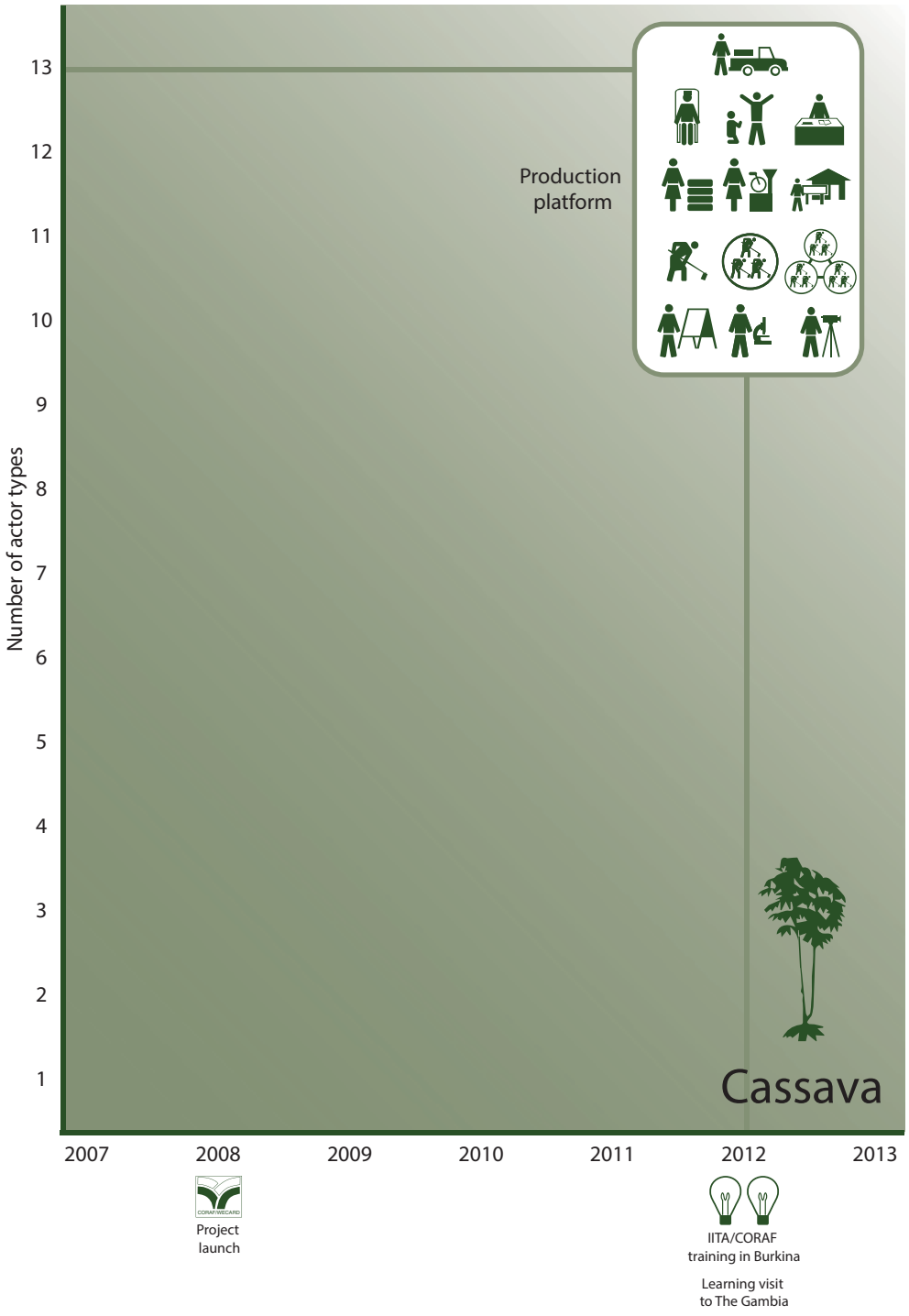
Local authorities: Provide legitimacy and linkages with government bodies

Media representatives: Communicate information to wide audience
Cameroon Radio Television, Cellule de Communication IRAD

National farmers' organization: Advocate, negotiate, mediate conflicts, train and support farmers
Concertation Nationale des Organisations Paysannes du Cameroun, CNOP/CAM

Professional networks: Facilitate marketing of cassava products, supply equipment and inputs
Réseau des Horticulteurs du Cameroun, RHORTICAM; Coopérative Nationale des Acteurs de la Filière Manioc du Cameroun, CONAFIMAC

Resource persons: Invest funds, offer advice, facilitate relationships, mediate conflicts, boost confidence
Local investors, individuals with special skills or knowledge


Number of actor types
13
12
11
10
9
8
7
6
5
4
3
2
1
Production platform
Cassava
2007
2008
2009
2010
2011
2012
2013
Project launch
IITA/CORAF training in Burkina
Learning visit to The Gambia

Cassava is woman's crop in Cameroon: it is they who grow, process and sell the vast majority of the country's annual output of 3 million tonnes of roots. It is a regular source of income for millions of women throughout the southern parts of the country. Indeed, some people compare it to cacao, which is overwhelmingly a men's crop.

But that does not mean to say women earn much money from their efforts. Yields of cassava are low: only 2–10 t/ha, in part because of a lack of good-quality varieties. Traditional local varieties have low yield potential and are susceptible to various diseases. The Institut de Recherche Agricole pour le Développement (IRAD, the national agricultural research institute) and its partners have developed and tested a number of improved clones that can yield 30–40 t/ha, but many farmers do not have planting materials of these varieties, and they do not know how to grow them to get the best yields. Postharvest problems include poor processing methods, the poor quality of processed products, and the weak organization of processing and marketing.

Rapid progress after a slow start

DONATA in Cameroon got off to something of a false start, caused by a combination of factors. It tried to focus on both maize and cassava. Support from various institutions was lacking, and the focal point was not able to formulate a suitable approach. Several farmers' groups were established, but their efforts were hampered by a lack of understanding of the innovation platform approach.

So when a new focal point took over in 2012, it was necessary to relaunch the initiative. He refocused it on a single crop, cassava, and sought the collaboration of organizations with the necessary expertise.

DONATA Cameroon now uses two entry points: cassava production, coordinated by IRAD, and processing and marketing, coordinated by the University of Yaoundé II. Three of the original farmers' groups continued, and four new ones were added. These groups were called "comités de concertation villageois" (farmer consultation committees). They included farmers, the village chief, religious leaders, traders and processors. These groups were facilitated by the farmer leaders, supported by an extension worker. Each group had several subgroups in different villages to organize their activities. They obtained improved planting materials from the research institute, and organized training on production methods and marketing opportunities.

After 8 months of working together, the consultation committees were ready for the next step. This was to add researchers from IRAD and the university, transporters, media representatives and two national non-government organizations (CNOP/CAM and RHORTICAM) to the mix. Adding this new set of actors converted the consultation committees into fully fledged innovation platforms. Each platform covers both production, and processing and marketing. The new actors have boosted the capacity of the platforms, introduced new ideas and opened up new possibilities. That makes it more likely that the platforms will be sustainable.

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"Before people were talking in ten different languages, each spoke for himself; now we sit in the platform and discuss together until we speak the same language."

– Maman Douala, president, Nkong Abok platform

goo.gl/43HEsj

By this time, the initiative had gained enough experience and understanding of the innovation platform approach to create three new platforms from scratch, without going through the consultation committee stage. So Cameroon now has a total of 10 innovation platforms on cassava.

Creating value in the chain

Cassava value chains in Cameroon tend to be fairly short. Three basic patterns prevail: part of the crop goes to feed the farmers' own families; part is sold as fresh roots to traders or direct to buyers in the market; and part is turned into various processed products for sale to consumers. Many women play all three roles: growing, processing and trading. Processing tends to be small-scale, with individual women harvesting a few roots at a time, processing them, and selling them in the market. That is more profitable than selling the fresh roots, but the products tend to be poor-quality, and prices are correspondingly low.

The innovation platforms are trying to increase the quantity and quality of products in these chains. An example is *gari.* The initiative arranged for an expert to facilitate the learning of delegates from each of the platforms how to make this product. The delegates in turn facilitate learning by the others within their groups. Similar approaches have been used to rapidly multiply disease-free cuttings, how to make *bâtons de manioc* (long, cooked rolls made of cassava, wrapped in arrowroot leaves), and how to produce products of consistent quality.

Another type of innovation has been in how processing and marketing are organized. Before, the women would work on their own; now they work as a group, making and selling larger batches of products. A few women take the whole group's output to the market to sell it. That saves time and makes the workers more productive. Selling in bulk also enables them to serve wholesalers who want to buy large quantities at one time.

Women work, men decide

Go into a cassava field in Cameroon, and you will see women and girls at work: clearing land, hoeing, planting, weeding, harvesting. They also peel and wash, grate and grind, boil and roast, cook and carry – turning raw materials into edible or sellable products. Not for nothing do Maman Douala and her friends refer to cassava as "women's cocoa".

In terms of numbers, women dominate the innovation platforms too. Of the 1,600 actors in the 10 platforms, three-quarters are female producers, processors and traders. Eight out of ten of the platform leaders are women. But that does not mean to say they have the biggest say in decisions. In this part

Box 4.2 The Nkong-Abok innovation platform

Ebaman, tegue sama ("Together we cannot fail") is the slogan of the Nkong-Abok Nkolbibanda innovation platform, about 50 km from Yaoundé. This group boasts 270 actors (170 of them women), divided into four subgroups in the villages of Mfida 3, Nkong-Abok, Yegue and Koli. It started out as a farmers' group that began collaborating with IRAD in 2005. In early 2012 it created a farmers' consultation committee, and in November that year it became a fully-fledged innovation platform when researchers, extension staff and transporters joined.

Each member contributes FCFA 1000 (about $2) a month. This money goes to pay expenses, including the wages of some young labourers to clear a 10 hectare plot, where the group wants to multiply disease-resistant cassava cuttings supplied by IRAD. This land has been donated by the Catholic mission and the local mayor. The aim is to grow enough cuttings to supply the people involved, and to support the farmers in producing disease-free cassava planting materials.

If this is successful, says Maman Douala, the chair of the platform, it will bring in higher incomes and maybe even attract men to cassava production and marketing.

of Cameroon, women are not allowed to inherit the land they cultivate. So the handful of men in the platforms have a disproportionate say in discussions and the decisions that are taken.

Six types of facilitators

Among the various actors in the innovation platforms, six take on facilitation roles. That seems a lot, but each one has a specific function. At the national level, three – the IRAD researchers, the national farmers' organization (CNOP/CAM) and the two professional organizations (RHORTICAM and CONAFIMAC) – coordinate activities, lobby, negotiate and mediate conflicts among the platform actors and the commercial entities.

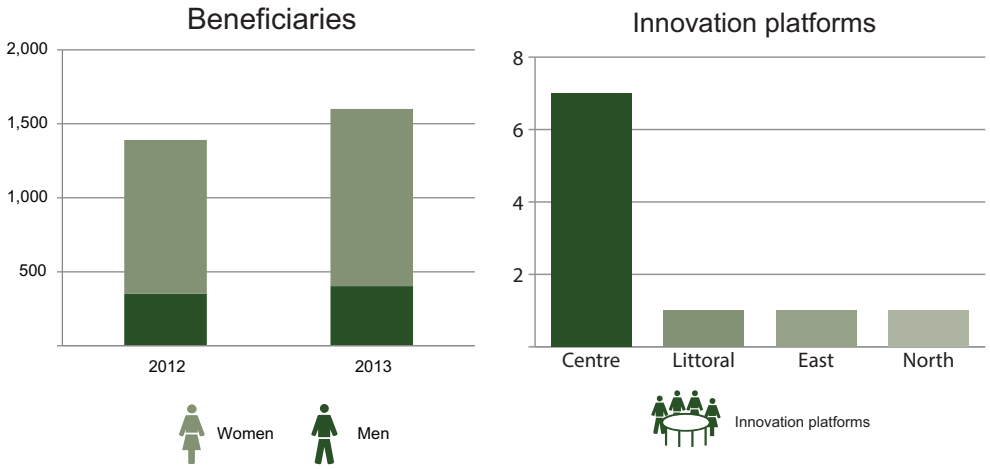
At the local level, three more types of facilitators – the platform leaders, local extension workers and outside resource persons – raise awareness, handle communications, and help organize the platform activities.

We can identify four major principles for establishing an innovation platform:

Photo: Geneviève Audet-Bélanger

Maman Douala presenting cassava products at a workshop in Okola, Cameroon

- Where possible, build on existing organizations (farmers' associations and the farmer consultation committees) and activities (production, processing and marketing).
- Use a participatory approach based on partnerships.
- Aim for ownership of the platform by the grassroot actors in it. This requires training the facilitators to ensure they have the necessary skills and attitudes.
- Set out development objectives based on local peoples' real needs.



Part 2
Innovation platform processes

5 GETTING STARTED

Previous page: A Congolese farmer in her cassava field with healthy cassava plants (right) and those with mosaic virus (left)

Photo: Geneviève Audet-Bélanger

5 GETTING STARTED

Remco Mur and Rhiannon Pyburn

> *The White Rabbit put on his spectacles. "Where shall I begin, please your Majesty?" he asked.*
> *"Begin at the beginning", the King said gravely, "and go on till you come to the end: then stop."*
>
> *– Lewis Carroll (1865), Alice's Adventures in Wonderland* [1]

A Sierra Leonean representative recounted *Alice's Adventures in Wonderland* when asked how he began with innovation platforms in his country: "The answer is rather simple," he said, "at the beginning." And then he added with a smile, "with the farmers." This chapter is about starting up innovation platforms. The question of "where to begin?" is often asked. But experience demonstrates that starting innovation platforms is often not an easy task, nor one to be taken lightly. The way a platform is initiated determines the composition of the platform, who takes the lead in facilitating the process, and the main objectives it tries to meet (Nederlof et al. 2011). A strong start is key to assuring that the objectives and aims are well-defined and adapted to the local context. This will allow a flexible approach for addressing each bottleneck along the value chain while taking advantage of new opportunities. The result should be a group of diverse actors working towards a common goal.

To many people involved in DONATA, innovation platforms were a new concept. This is true not only for the researchers at the national research institutes, but also for the stakeholders in the maize and cassava sub-sectors, including smallholder producers, processors, traders, extension agents, to name just a few. During the early stages of the initiative, this posed many challenges. How to initiate an innovation platform? Who should be involved? How to align stakeholder objectives with DONATA objectives? This chapter reflects on this start-up phase. We start by looking at the role of the national research institutes in the start-up phase and how changing mind-sets determined the way in which the innovation platforms were conceptualized and implemented. We then look at the entry points embraced by the various platforms and the role of an entry point in shaping (or not) a platform's opportunities and evolution. Next we look at the site selection and level of the platform, followed by the composition – who to invite to participate. The chapter compares the

1 As told by Fomba, Sierra Leone DONATA focal point, when asked how he began the innovation platforms in that country.

different experiences of six DONATA innovation platforms across these four dimensions and draws conclusions on starting up an innovation platform in the final section.

Role of the national research institutes

In the countries targeted by DONATA, the initiative for creating innovation platforms was taken by the national agricultural research institutes. They were the main implementers of the initiative; in most countries they were also the main facilitator or broker of the platforms. In 2008, when implementation began, the research institutes had very little or no experience in establishing and facilitating innovation platforms. Agricultural innovation systems concepts were completely new to most, not only to researchers and their managers, but also to other stakeholders. Although integrated agricultural research for development approaches had been promoted for almost a decade, the development and dissemination of new knowledge in the form of new technologies or practices, was most often done through the traditional linear transfer of technology model (see Chapter 1). This was also true of the research institutes involved and is reflected in the way in which the initiative referred to its stakeholder interaction mechanisms as: "innovation platforms for technology adoption". Innovation platforms were conceived of as instrumental – a way to get technologies developed by researchers into use by farmers. This was a typically linear model involving researchers, extension workers and farmers, with researchers sitting on the innovation production side, extension workers active in the innovation dissemination phase and farmers as users or recipients of innovation.

However, in 2010, a radical change in the way DONATA partners approached innovation platforms started to take shape. This happened after a new programme manager for knowledge and capacity strengthening at CORAF/WECARD was appointed, who also bears responsibility for DONATA. He realized that the potential benefits and strengths of innovation platforms were not being fully exploited in that set-up. He saw that innovation platforms would be especially useful and effective mechanisms for needs articulation, identification of new opportunities for change, experimentation and feedback, and to achieve systemic change. It also became clear that technology dissemination at scale is not a major strength of platforms, so a focus on technology adoption or dissemination was less than optimal. It was time for a radical shift in focus of the DONATA platforms.

The initiative was re-jigged, starting with a training in 2012 for focal points and selected platform stakeholders from the different countries. This training introduced concepts related to multi-stakeholder processes and value chain development as a foundation for a brave new world for the existing platforms and new ones that would soon be in place. An important and highly appreciated part of the training was the exchange of experiences between representatives (focal points as well as other stakeholders) from different countries (experiential cross-country learning) as well as a practice-oriented field visit. As follow up, a number of visits were organized to continue cross-country learning. This

triggered a whole new dynamic at the national and platform levels, as we will see below.

As a result, in most of the countries participating in DONATA, the focus of the innovation platforms has shifted profoundly since 2010, from mechanisms for dissemination of technologies towards a means for interaction and co-learning among diverse stakeholders. This is illustrated by:

- Changing focus and activities
- Changing composition of the actors involved
- The emergence of new platforms with new entry points.

The following paragraphs highlight these changes. We will see that the choice of entry point for a platform is important, but that in many platforms the focus has diversified beyond the initial entry point. This has had consequences on the composition of the platforms, as new actors were needed to reflect the new focus, mainly from production to multiple topics such as processing, marketing and policy influence. In other cases, new platforms have emerged, addressing value chain dimensions.

Entry points

Many practitioners intending to work with innovation platforms struggle with the question of where and how to begin. Innovation platforms are often formed around a particular domain, such as a specific commodity, value chain or business cluster, or in particular agro-ecological or farming systems. Nederlof et al. (2011) point at the impossibility of design: innovation platforms are multi-stakeholder processes that are dynamic and flexible by nature. Design in detail is therefore not possible or desired. In practice, we see that innovation platforms are often set up around production issues. Processes through which innovation platforms are established include getting people interested, sensitizing and identifying interested stakeholders to work together on a common commodity value chain for common benefit.

Initially, the DONATA innovation platforms were organized around entry points: technologies or best practices chosen as the first priorities the platforms would address. An entry point is often a response to an opportunity or a problem, e.g., farmers' access to a disease-resistant cassava variety. The immediate aim of the platform is to disseminate the technology or practice.

In the beginning of DONATA, each country identified one or more entry points for its innovation platforms. These covered two types of issues: crop production (including the availability of seeds and cuttings), and processing and marketing. In principle, one platform could only have one entry point. This means that if more entry points were selected, more platforms had to be created. An entry point could be chosen by the platform actors, but in most cases it was facilitated by the national agricultural research organization. The example from the Republic of Congo (Box 5.1) shows that the entry point of the platforms was chosen by stakeholders at the national level, before the location of the platforms was known.

Box 5.1 Entry points in Republic of Congo

A national consultation workshop was organized at Brazzaville in May 2008 to launch DONATA. The participants included the national agricultural research system, related research institutions, agricultural extension, university, farmers' organizations and NGOs. They identified seven promising technologies for DONATA to focus on:

- Production of mosaic-resistant cassava
- Production of cassava cossettes (a fermented and dried cassava product)
- Processing of cassava into gari
- Manufacturing technology for the production of chikwangue and mbala-pinda (types of food made from cassava)
- Manufacture of starch
- Technology to process cassava leaves (grinding, packaging)
- Production of local alcoholic drink (*boganda*).

Three priority entry points were selected:

- The production of mosaic-resistant varieties
- Processing cassava into *gari*,
- Making *chikwangue* and *mbala-pinda*.

Based on the three entry points, five platforms were established, each with a single entry point (either access to new varieties or processing).

More information: Chapter 4.2

The focus on one entry point in the early stages does not prevent the platforms from addressing other issues over time. In almost all countries, the innovation platforms are evolving, both in terms of objectives, activities and composition. This was catalysed by the introduction of concepts related to multi-stakeholder processes and value chain development during the 2010 training in Ouagadougou, facilitated by CORAF/WECARD and IITA.

The Gambia and Sierra Leone production platforms, for example, initially focused on access to improved maize and cassava varieties respectively. But after the productivity increased, there emerged a need to also engage in processing and marketing to raise the value of the bigger output. New platforms may also be created to address emerging issues. Depending on the emerging challenges, the platforms can be established at a higher level. In Burkina Faso, processing and marketing platforms were created at the provincial level; in Gambia a policy platform was established on the regional level.

In **Sierra Leone**, the selected entry point was to enhance the adoption of proven cassava technologies. Stakeholders selected the Northern and Eastern provinces as DONATA's key intervention areas. The two districts were chosen because of the limited availability of planting materials in the Eastern Province, and late planting as well as loss of planting materials in the Northern Province. These problems were exacerbated by the long war that afflicted the country and put a halt to major farming activities. In the Northern Province, the innovation platform comprised of five farmer-based organizations consisting of 100 men and 67 women. These groups were selected to promote early planting of improved cassava varieties, so as to avoid dry-season pests such as grasshopper, mealy bugs and cassava green mites, thereby increasing cassava productivity.

Table 5.1 Change in focus of the innovation platforms

Country	Initial entry point and level	Change
Maize		
Burkina Faso	Regional production (2008)	Initiation of local production platforms (2010) Regional marketing platform (2010) Regional processing platform (2011)
Mali	Local grain production (2008) Local seed production (2008)	
The Gambia	Local production (2011)	Initiation of a regional policy platform (2012)
Cassava		
Sierra Leone	Local production (2008)	Focus broadened to processing (2009) and marketing (2012)
Republic of Congo	Local production (2008) Local *gari* processing (2008)	New processing platform on *mbala-pinda* processing (2011)
Cameroon	Local production with additional local processing and marketing focus	

Five farmer organizations with 107 men and 108 women members were similarly selected in the Eastern Province, but they did not focus on early planting since that is not a constraint in the region.

In 2012, the increased production made the platform facilitators and other actors realize that they should broaden their work to deal with processing and marketing issues, so improving the producers' income. The platforms are now linked with privately owned processing centres in their districts.

The composition of the platforms in Sierra Leone radically increased from four actor groups in 2008, to five in 2009 and to 13 in 2012 (Chapter 4.1.). The focus on processing and marketing increased the complexity of the issues the platforms were dealing with, and the solutions to them. Hence the need to involve more actors, beyond the traditional value chain actors, and also including a variety of service providers and policymakers.

The approach in **Cameroon** was different. Although platforms there officially have an entry point, i.e. access to improved cassava varieties and improved soil fertility, from the beginning the platforms have addressed other value chain issues too. The innovation platforms in Cameroon benefited from a difficult start of DONATA in the country: after some initial internal problems at the research institute, the innovation platforms were established only after a new focal point was appointed. He participated in the DONATA training in Ouagadougou on multi-stakeholder processors and value chain development and in the learning visits; he was able to apply the multi-stakeholder and value chain development concepts from the start.

The experiences in DONATA show that an entry point is important to gain interest of important stakeholder groups. The focus on production-related issues implied a strong presence of producers in the initial stages of all platforms. Nowadays, the platforms, in all their diversity, still benefit from this: they have

in common that they are all well-rooted at the local level and that farmers are among the most influential stakeholders within the platforms.

Site selection and level of engagement

The selected entry point for an innovation platforms influences the level on which a platform is established and the site selection. Nederlof et al. (2011) state that local innovation platforms are most suited for finding practical solutions to a local problem or opportunity, by linking local actors. At higher levels, platforms target policy change.

Initially, most of the DONATA innovation platforms began at the local level. The choice for local-level platforms is related to the choice of entry point: as the focus of most of the early platforms was related to production, the need to work closely to producers was obvious. Hence the creation of local-level platforms in The Gambia, Sierra Leone, Cameroon, the Republic of Congo and Mali. In Burkina Faso, the first platforms were created at a regional level, but after 2 years, the facilitators realized that to tackle production-related issues, the direct implication of local actors, and in particular producers, was required. Hence the establishment of local-level production platforms there.

In **Mali**, seven seed-production platforms were created at the local level. In three of the locations, grain-production platforms were also established. Some actors in the seed network are also linked to the grain networks. There is overlap in participation.

It is interesting to see that once production issues were addressed, a need for new platforms at a higher level emerged. Often with representation of the local platforms: in The Gambia, the regional policy platform was initiated to engage and influence policymakers. Local platforms would not be able to do this on their own. In Burkina Faso, processing and marketing platforms were established at the provincial level simply because some important actors operate at this level. In other countries, such as Sierra Leone (a regional coordinating body) and Cameroon, other mechanisms to link local level platforms were put in place.

Site selection was quite pragmatic. In **The Gambia**, maize is important for food security and because of people's preferences. Consultations with local and higher level government officials were undertaken to determine where to best engage in order to showcase the initiative. The National Agricultural Research Institute and its partners were practical and even opportunistic in making the choice: because innovation platforms were a new phenomenon, it was important to establish them where they were most likely to succeed. Criteria included the existence of successful projects in the past, the importance of maize for income generation and food security, active agri-businesses in the maize sector, and the presence of a strong facilitating organization. Based on these criteria, the research institute opted for the North Bank region. A consideration in this decision was that the Agricultural Training Centre, an NGO with a good track record in adult education and community mobilization approaches, with whom the research institute already had strong ties and good experiences, was also

based in the region. Indeed, the choice would prove to be strategic as the NGO ended up playing a critical role in the creation and facilitation of the platform.

In **Sierra Leone**, the post-war situation required more careful attention and sensitivity in making choices. The Northern and Eastern provinces were unanimously selected by stakeholders as the key intervention areas for the initiative. The reasons for the choice of these two districts were that planting materials had been lost in the Eastern Province due to the war, even though they have an early planting cycle. And in the Northern Province, not only were loss of planting materials and late planting cycle an issue; also the long war had brought most major farming activities to a halt. Site selection within Sierra Leone was political, where the public perception of the Sierra Leone Agricultural Research Institute as a neutral, non-political organization was at stake. That is to say that prioritizing only the Northern Province, for example, would have favoured the ruling class. Hence, the research institute started simultaneously in the two provinces and only at a later stage did they initiate platforms in the Southern Province.

Composition: Who participates in the platform?

The Sierra Leone case shows that the composition of an innovation platform depends on the complexity of the issues that the platform is dealing with. A single focus on increasing productivity requires a limited number of actors. An additional focus on processing and marketing increases the complexity of the problems the platform will tackle. It implies the need to get more categories of actors on board: not only value chain actors, but also services providers and decision makers.

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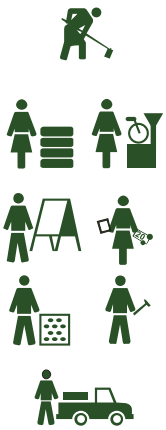
A key idea of innovation platforms is that multiple, interdependent stakeholders jointly address a shared problem or objective. The stakeholders may include individuals and organizations. Common stakeholder groups in the DONATA platforms are:

- **Agricultural producers** The core of most innovation platforms with development objectives is formed by farmers or livestock keepers.
- **Other value chain actors** They add value to the products supplied by the producers. Value-adding activities include processing, trading, packaging and branding.
- **Service providers** These provide services to the value chain actors, enabling them to effectively engage in their activities and get finance, information and inputs. Service providers may be public, private or civic; they typically include extension, financial service providers (credit, insurance, savings), transporters and input suppliers.



- **NGOs** NGOs provide services and are involved in community development and mobilization but could also play a role in funding, either directly or by playing an intermediary role in accessing funds. NGOs often have a social agenda and are well-connected to and experienced in working with disadvantaged groups.

- **Research** This is a special type of service provider with the task of developing new knowledge that is relevant to the other stakeholders. This knowledge may be in the form of new technologies or agronomic practices, or it may relate to new ways of organization and market arrangements.

- **Policymakers** Innovation platforms need formal recognition and policy support to be effective. Innovation is often a combination of technological, organizational and institutional change. Policy change is a prerequisite for many innovation processes to be effective. Hence the importance to engage policymakers directly or indirectly in innovation platforms.

- **Media** Newspapers, radio, television and web-based media play an important role in innovation platforms. They disseminate information to external stakeholders (see also Chapter 10), and are crucial for sharing knowledge and information among the platform actors.

A platform dealing with seed production, for example, will typically include farmers, input dealers, seed multipliers and research and extension workers. One dealing with marketing is likely to involve traders, transporters and processors.

In most countries, the cassava and maize platforms started with just a few actors. This was in line with the DONATA pioneers' initial understanding of the functions of an innovation platform. In the first years, the main objective was to disseminate new technologies to increase productivity: improved varieties and production technology that were developed by research were to be disseminated through the innovation platforms via the agricultural extension services. The three actor groups involved were research, extension and producers, and in a few cases, NGOs or local authorities. At the time, in most countries, an innovation platform meant a farmer or community groups. It was a group of producers, often operating at a local level, targeted by research and extension to promote a new technology, often a new improved cassava or maize variety. This limited conception of innovation platforms affected their initial composition.

Burkina Faso was the major exception to this. INERA, the national research institute, started with the establishment of a platform at the regional level, aiming to improve maize production. This had representatives of nine different actor types. Soon the stakeholders realized that to address production issues, they required stronger relations with primary stakeholders. So local-level platforms were established with a limited number of actor groups. Representatives from these local platforms were actors in the regional platform.

But as the need for other activities emerged, so too did the need to engage other stakeholders. The platforms in Sierra Leone and The Gambia realized that after productivity had risen, processing and marketing became the new challenges. Addressing these challenges required the participation of processors and traders. The platforms evolved from a traditional collaboration between research, extension and farmers to more genuine multi-stakeholder innovation platforms.

The initial focus on farmer and community groups proved useful: in the later stages, the platforms were well-rooted at the grassroots level. Smallholder farmers are still considered the ultimate beneficiaries of most interventions that promote innovation platforms: the overall objective is often to improve their livelihoods. Hence, it is important to make sure that producers have a strong representation in the platform.

Nevertheless, challenges remain in ensuring a good representation in platforms. How to make sure that the diverging interest of this diverse group are taken into account? Cassava and maize producers are not a homogenous group of actors. The diversity among producers is difficult to deal with: one farmer's needs, objectives, access to and control over resources are not the same as another's.

In **Mali**, IER established innovation platforms based on two entry points: seed production and grain production. In total, 10 platforms were created at the local level: seven for seed and three for grain. In the locations for grain, seed platforms were also established. It appears that participation overlaps in these locations: certain actors are involved in both types of platforms. The Mali case also shows that local-level platforms may involve higher-level actors, such as seed companies. In **Burkina Faso**, some actors overlap across the three kinds of innovation platforms: production, marketing and processing.

The case of **The Gambia** shows that to some stakeholders, the innovation platforms prove less beneficial than expected. Initially poultry farmers and the feed industry participated in the platforms, expecting to have access to cheap grain from the producers. The promoted varieties were even targeted towards poultry as these actors were in the platform. The feed industry agreed to buy all the maize the farmers on the platform could produce, but the price was not discussed at the outset. The research institute facilitated the negotiation of a new price between farmers and industry who were not participating in the platform. But the farmers realized that they could get higher prices for their maize elsewhere. This caused political wrangling between the feed industry and the farmers. Eventually, the chicken producers decided to withdraw from the platforms.

In **Burkina Faso**, pastoralists and agricultural producers are highly interdependent. Livestock depend on crop residues for feed, and the farmers need manure for their fields. Conflicts between pastoralists and maize producers are not rare. And although the conflicts are "outside" the innovation platforms, they do influence the platforms' functioning as production is affected. To address such problems, the actors involved in one of the production platforms decided to invite the herders to their meeting, but during the meeting the herders did not speak. Eventually, the regional governor (*haut-commissaire*) managed the conflict. The people already involved in the platform tried to court the pasto-

ralists to become platform actors also. But eventually they indicated that they were not interested to join because the issues covered did not sufficiently focus on animal production, and the other actors involved were not relevant to them. For example, there were no vets on the platforms, something the pastoralists considered essential to address their major concerns related to animal health.

Thus, the composition, level and focus of the platforms changed over time, from the initial entry point (production) to other value chain activities and policy influence. This illustrates very nicely the changing nature of the parameters of an innovation platform. The boundaries of innovation platforms are not fixed, but are negotiated. Stakeholders enter, leave, are courted, and may decide to join, or not to join, a platform.

Seed money

Innovation platforms come at a cost. Especially in the early stages of a platform, the availability of a minimum of financial resources can be important to engage stakeholders and keep them motivated, especially for the poor. But financial support may also create unrealistic expectations and dependency, and may affect the sustainability of the platform. Stakeholders may join a platform with the false expectation to get financial or other form of support that the platform cannot provide. These actors are likely to leave the platform once they realize that the platform is not an "ordinary project" that offers direct financial benefits. The incentives of being a platform actor do not consist of financial support.

Nevertheless, a certain level of support to the operations and activities of the platform is required. In all countries, DONATA has financially supported platforms in various ways:

- **The platform's functioning** In most cases, funds are available for meetings, for example to compensate stakeholder representatives' costs to attend meetings (transport and food).
- **Agricultural inputs, tools and equipment** In most countries DONATA has financed "start-up" inputs, including seed or planting materials, fertilizers and tools. In most cases, financial support for inputs was given only during the first year. In the Republic of Congo, transport of harvested cassava was problematic. DONATA paid for a cart for each production platform. The cart remains property of and is operated by the platform.
- **Capacity building** This includes training, field days and exchange visits.
- **Other support** For example the Sierra Leone Agricultural Research Institute provided emergency funds to one of the platforms after the roof of a processing unit was destroyed by strong winds.

Funds are managed by the national research organizations. In most countries, the innovation platforms do not manage financial resources themselves. **The Gambia** is an exception, where the actors participating in local platforms each pay an individual membership fee of approximately $1.50 which is used for the platforms' activities (mainly meetings). The platforms have their own

Photo: Geneviève Audet-Bélanger

Cassava being transported by "pousse-pousse" – carts owned by the platform for members' use in Loudima, Republic of Congo.

bank account. In the first year, Gambian farmers received maize seeds and fertilizers to promote new varieties. From the beginning they knew that this support was only for one season. So the local platforms developed a collective storage system for maize seed to guarantee quality. Each member stores seed for the next season, and surpluses are sold. With the income they buy fertilizers. Financial support for sourcing seed each year is no longer required.

Conclusions

Innovation platforms are based on concepts related to **agricultural innovation systems**, multi-stakeholder processes and value chain development (see Chapter 2 for more on key concepts). A thorough understanding of these concepts and the mastering the related competencies is the basis for successful platform implementation. This is illustrated by the DONATA experiences, where in the early stages, most innovation platforms were actually farmer groups that were supported or targeted by extension and research. Despite a relatively weak conceptual start, these groups were able to evolve towards more robust innovation platforms after the concepts and practice of multi-stakeholder processes and value chain development were introduced and embraced, first by the research institute initiators and later by a broader group of stakeholders.

From the experiences presented in this chapter, we see that while the choice of an **entry point** is important, it does not prevent platform actors from addressing other issues at a later date and initiating unforeseen activities throughout the lifetime of the platform. What is important is that the entry point be concrete and have practical action points associated with it. That binds actors, especially the producers, to the platform. The choice for production as an entry point for most of the platforms contributed to strong buy-in by local actors. The subsequent interaction among the platform actors leads them to realize that there are other blockages to subsector development beyond just production constraints. That can lead to the emergence of new focuses and platform activities, and even new platforms at higher levels. The latter was the

case in **Burkina Faso**, where the need for processing and marketing platforms emerged. In **The Gambia**, a regional policy platform was created to address some of the policy constraints to maize sector development, identified at the local production platform level.

Starting with entry points related to **production** can ensure a strong focus on farmers and their local organizations. This can be advantageous as the platform evolves and engages in other activities such as processing, marketing and policy, as linkages to the grassroots level are already well established. This allows for farmers' engagement and representation of local-level stakeholders in higher-level platforms. Famer participation is often a challenge to secure in many higher-level innovation platforms, so this link is most welcome. At the same time it includes a risk that platforms may not develop beyond production-related issues.

Three factors can be distilled regarding site selection and level of an innovation platform. First, the choice can simply be based on practical reasons: accessibility, the distance to the research institute, the existence of past successful projects, the importance of the crop for income generation and food security, the presence of active agri-businesses in the sector, and the presence of a strong facilitating organization. In the case of a new approach like innovation systems, where its relevance still needs to be proved, it may be a good idea to select a location where success is more likely. But the decision can also be political, as was the case in **Sierra Leone**. Especially in post-conflict situations this can be important.

Site selection and level must relate directly to the entry point. In this case, this meant a local level, related to the technical entry points. A second factor is pragmatic – where is the innovation platform likely to succeed? This is especially important where the innovation platform is a pilot or an example intended to later be scaled out. The third factor is strategic. Where there are political issues at play, locations that assuage stakeholder fears, biases or concerns may be very important, as was the case in **Sierra Leone**.

The **composition** of a platform is not static. While the choice of an entry point defines the initial composition of the platform, the composition is dynamic and changes over time, depending on the sectoral issues arising for those involved in the platform. In all countries we saw new actors come on board, others leaving, and still others being courted, either successfully or not. Even when the innovation platform is externally initiated with a specific, pre-defined objective, it is able to evolve, in terms of its objectives, actions and composition. For DONATA, for the most part, the innovation platforms began with a technology dissemination objective using a traditional transfer of technology model with the typical trio of actors – researchers, farmers and extension workers. Eventually, as understanding on the concepts related to innovation platforms were absorbed by key actors, the process was modified en route, and the issues addressed by the innovation platform expanded beyond the initial entry points. The composition was thus affected and adjusted to accommodate these new dimensions. In **Sierra Leone** for example, we saw the innovation platforms evolving from local farmer groups that collaborated with research and extension, to vibrant, multi-stakeholder platforms that address processing

and marketing and engage a variety of actors, including processors, traders and service providers.

Whether or not stakeholder groups join a platform depends on the **perceived incentives**. Often these expectations are related to direct financial benefits. It is crucial to be clear about the objectives of an innovation platform from the beginning: unlike many other development initiatives, platforms are not mechanisms to channel funds to beneficiaries. Some seed money, however, is required to finance platform operations and the initial activities. But the ultimate objective of the platform is to seek more sustainable solutions, including sustainable financing mechanisms. The seed storage system in **The Gambia** is a fine example of such mechanism.

Farmers are important actors on the platforms presented in this chapter. However, there are differences between farmer groups – whether they call themselves "farmer cooperatives", "farmer-based organizations" or "producer organizations" – and an innovation platform. An important distinction must be made. We saw the challenge in the **Republic of Congo**, for example, where the platforms began largely as farmer organizations and are slowly shifting towards more stakeholder representation. The mindset of the participants still largely has a producer focus. Compare this to **The Gambia**, where the starting point was multi-stakeholder with many farmers participating, but alongside local politicians, transporters, processors, traders and other actors. A very different example again is that of the **Burkina Faso** policy platform, where farmers are represented, but as one of many interest groups.

As we discuss in Chapter 1, innovation platforms can act as a countervailing force against the pervasive bias against smallholder farmers in the agricultural sector. This is a strength and an advantage of a learning approach that depends on multi-stakeholder and diverse stakeholder participation. However, the countervailing force is strongest where small farmers stand alongside local politicians, traders, input suppliers, government officials, traders, transporters, processors, and so on. This challenge in generating, stimulating and maintaining the multi-stakeholder nature of the platform is a key to sustainability and political influence. We will return to this in Chapters 7 and 8.

We have also seen that stakeholders can join different platforms. In **Mali** for example, farmers and farmer groups that participate in the grain production platform often also join the seed platform. In **The Gambia**, farmer groups, who are at the heart of the local platforms, are also represented in the regional policy platform. The same applies for **Burkina Faso**. This interconnectedness provides opportunities for synergies and systems change and is also further discussed in Chapter 10 on knowledge and information sharing.

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6 FACILITATING STAKEHOLDER INTERACTION

Previous page: Processors and traders in a Gambian innovation platform preparing a septagram, March 2013

Photo: Geneviève Audet-Bélanger

6 FACILITATING STAKEHOLDER INTERACTION

Remco Mur, Rhiannon Pyburn and Sidi Sanyang

Once an innovation platform is established, it needs to be maintained and nurtured: stakeholder interaction must be maximized, and this requires good facilitation. Facilitating stakeholder interaction is the backbone of an innovation process and has been the focus of recent publications on agricultural innovation (e.g., Klerkx et al. 2009; Nederlof et al. 2011; Nederlof & Pyburn 2012). Whether implicitly or explicitly, actors in a platform define the ways in which they interact: they shape the rules, processes and behaviour through which different interests are articulated, resources are managed, and how power is exercised and mitigated. This chapter looks at facilitation of the innovation process and how interaction within multi-stakeholder processes can be enhanced and maximized. It is grounded in the assumption that it is through stakeholder interaction that more and better technical and institutional innovations are brought into play.

In Chapter 1, we refer to innovation platforms as mechanisms to organize interaction among different stakeholders in the agricultural innovation system. This is a new way of looking at agricultural research for development at CORAF/WECARD and within the different national agricultural research institutes within DONATA. Practical experiences related to facilitating stakeholder interaction are not widely documented, especially where national agricultural research organizations are the initiators. So the cases offer a unique opportunity to capitalize on the experiences of these facilitators in West and Central Africa who are actively coaxing and guiding innovation processes with stakeholder interaction as a guiding principle. They offer a fresh contribution to this field.

The chapter begins by exploring what **facilitation of innovation platforms** is all about, looking both at the literature and how the platforms in the field have dealt with it. Its looks at who – **which actors or organizations** – are responsible for facilitation, as well as the kinds of strategies used and the factors that determine them. The chapter then takes a closer look at **stakeholder interaction**, drawing on empirical examples to look at some of the benefits as well as the challenges associated with managing the stakeholder interaction process. The next section presents the findings of an **analysis of the influence of innovation platform actors** across the six countries where field work was undertaken. Interesting comparisons, contrasts and reflections are discussed related to power dynamics and actor influence within the cases. A final section takes up the question of **platform coordination**, considering the factors of leadership and organizational structure of the platforms, and of formalization. The chapter concludes by drawing out some key learning on facilitating stakeholder interaction for agricultural innovation platforms in West and Central Africa.

Facilitating innovation platforms

Innovation platforms rarely emerge or evolve without some form of external intervention; to organize stakeholders and bring them together, facilitation is required. Facilitators or "innovation brokers" (Klerkx et al. 2009) play an important role in the start-up and the life cycle of an innovation platform. This role can be played by a person or an organization that aims to enhance innovation by bringing stakeholders together, and by facilitating their interaction. Nederlof and Pyburn (2012) differentiate four phases in the life cycle of an innovation platform (Figure 6.1).

Phase 1. Scoping and preparations for establishing the innovation platforms

The scoping phase refers to the period prior to the establishment of an innovation platform. The scoping period is important for gaining understanding of the issues (constraints and opportunities) related to the maize and cassava sub-sectors. This needs to lead to decisions related to the platform's entry point, the location and level as well as the initial actors to be engaged in the platform. The phase includes awareness-raising among stakeholders and gaining policy support. Chapter 5 addresses issues related to site selection, entry points and composition.

Phase 2. Process management

During the second phase platform, actors involved start identifying and tackling constraints and agree on the way the platform will operate. During this phase, the platform generally initiates concrete actions to address the initial entry point and to provide tangible results. During this phase it is important

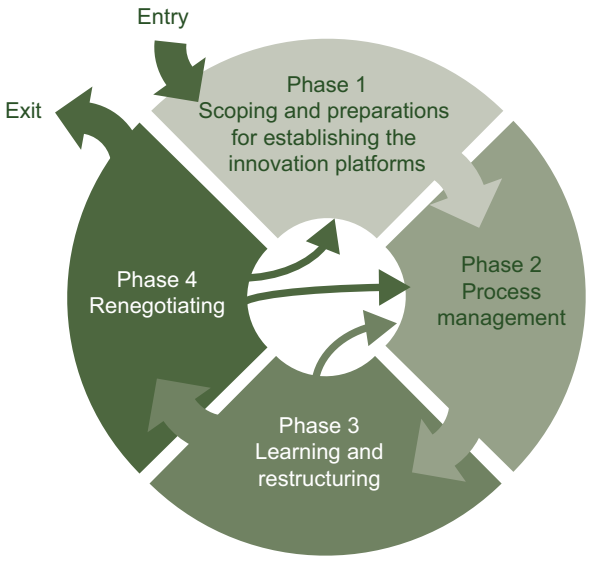

Figure 6.1 Innovation platform life cycle

Source: Nederlof & Pyburn (2012), adapted from Tennyson (2005)

to have access to a form of seed money to enable the platform actors to invest in the platform and its activities.

Phase 3. Learning and restructuring

During this phase, the platform is established and is functioning. Joint reflection is required to see whether activities are progressing, the platform is achieving its objective, the activities initiated are the right ones, and the right stakeholders are on board. New directions can be agreed on and other activities initiated; the people involved might change during this phase. During this phase, the platform further takes shape, for example by developing ground rules, by taking decisions on formalization, and by deciding on how to mobilize and use financial resources.

Phase 4. Renegotiating

During this phase, the platform actors address the question of how outcomes can be sustained. This could refer to the platform itself or the capacity to innovate. DONATA platforms have not entered this phase, except perhaps those in Burkina Faso. Issues of sustainability are further discussed in Chapter 7.

At the time of writing, most DONATA innovation platforms were in phase 2 or 3 of the life cycle presented above. In Burkina Faso, The Gambia, Mali and Sierra Leone, the platforms have clearly entered phase 3: new constraints, beyond the entry points, are being identified and tackled, and the rules and processes within the platform are becoming routine. In Cameroon, where platforms have been operational for just over one year, and in the Republic of Congo, the platforms still are in phase 2. In both countries they are limited to activities related to the initial entry points.

The **Gambian** experience is especially noteworthy in that it entered DONATA relatively recently, with platforms starting up just in 2011. Yet despite this, the Gambian platforms are clearly in phase 3, addressing new entry points already and engaging in policy issues. This quickened development can be accounted for by the insights that the Gambian national agricultural research institute and other platform actors were able to gain through learning from the experiences of other DONATA partners in cross-country learning initiatives like the learning visit in Burkina Faso and in The Gambia itself (see Chapter 10 for more on avenues for knowledge and information sharing). The national context and capacity to innovate of the individuals and organizations involved have facilitated accelerated development (see Chapter 7 for more on capacity to innovate).

Facilitating innovation platforms encompasses a variety of roles which can be played by different persons or organizations that are often, but not always, platform actors (Mur & Nederlof 2012). The brokering and facilitation roles are critical to innovation, as they enable enhanced interaction and joint learning among stakeholders. Table 6.1 provides an overview of facilitation roles in innovation platforms.

Some examples of facilitators playing these different roles can be found in the stories and boxes throughout the text in this chapter. The major role of a facilitator is to enable others to innovate (Nederlof et al. 2011). The facilitator is content-neutral as far as possible. He or she contributes structure and process to stakeholder interaction so that the platform as a whole can function more effectively, collaborate and achieve synergy. The facilitator encourages participation, promotes mutual understanding and cultivates a sense of shared responsibility.

A facilitator can be an individual or an organization that helps a group of people understand their common challenges, opportunities and objectives and assists them to search for inclusive solutions and to build sustainable agreements and make plans to realize them. Innovation platforms are usually convened by research or development organizations. In the case of DONATA, the innovation platforms were convened as element of the initiative and to begin with the facilitation was often done by the research organizations in charge.

In **Mali** and the **Republic of Congo**, for example, the national agricultural research institute scientists act as brokers of the innovation platforms. In both countries, they closely collaborate with agricultural extension; in the latter they play a role also in the mobilization of stakeholders, farmers in particular. The Malian research institute, through its focal point, takes responsibility for process facilitation and innovation brokering in all ten platforms in that country. The platforms meet when needed. Further, the research institute initiates meetings together with the extension service. It is responsible for the content, while the extension service provides logistical support and mobilizes local stakeholders to join the platform. Radio and other media also play an important role in mobilizing stakeholders. As in most other countries, extension provides technical

Table 6.1 Different roles in facilitating innovation

Championing	Representing local stakeholders at a higher level and functioning as an example to others.
Brokering	Making connections between actors who can benefit from each other's services or roles. Brokering can be done between multiple actors by bringing them together in a network, either informally or more formally. Brokering can also be done between two actors to ensure they start working together.
Facilitation	Stimulating and assisting the interactive process between stakeholders with the objective of improved quality of interaction.
Thematic leadership	Taking initiative on a certain topic (after a cluster of challenges is identified during first platform meeting).
Mobilization	Lobbying essential stakeholders to join a platform or local-level organization.
Mediation	Resolving conflicts.
Advocacy	Promoting the network and assuring support of and buy-in for the network by those individuals and organizations that matter.
Problem solving	Identifying, proposing and providing practical solutions for bottlenecks hindering progress of multi-stakeholder action.
Technical backstopping	Providing technical advice and training to ensure that opportunities discussed are economically, technically and socially viable.

backstopping of producers through, for example, field days, demonstrations and training to farmers and other stakeholders.

The **Sierra Leone** Agricultural Research Institute is the only national research organization in DONATA that has an extension department, with field staff in the regions who are responsible for the dissemination of new knowledge to communities. Parallel to this system is the extension service of the Sierra Leonean Ministry of Agriculture. Linkages between the research institute and Ministry of Agriculture extension service appear to be quite weak. Within the research institute, research and extension staff have good linkages as they are part of the same organizational structure, and the extension workers have taken up the role of innovation broker.

In **The Gambia**, the initial facilitation was done by the national agricultural research institute, but the choice to initiate DONATA on the north bank of the River Gambia was made explicitly due to the presence of the Agricultural Training Centre, a local NGO. This organization has taken up the role of innovation broker, while the research institute is responsible for project management and, as a platform actor, for developing and providing knowledge (new agronomic practices, technologies and varieties) to the other stakeholders in the platforms. The NGO also mobilizes the platform actors. The extension service provides the technological perspective in discussions. Local politicians (local chiefs, etc.) offer guidance in terms of adhering to innovation platform rules to avoid conflicts. The district chief chairs the platform meetings.

As in The Gambia, the initial facilitation of the platforms in **Burkina Faso** was the responsibility of the national agricultural research institute. Gradually, the facilitation was shared with extension (both public extension and by an NGO known as CREDO) and the Fédération Nian Zwè, a well-established farmers' organization with more than 20,000 members in Sissili and Ziro provinces. The Fédération Nian Zwè is organized in provincial, communal and village associations; this ensures the platforms are linked to the grassroots level. The choice to work with the farmers' organization was based on its capacity to reach smallholder producers, which is considered important in Burkina Faso (and most other countries). So far, the Fédération Nian Zwè, as a representative of the producers and thus not necessarily a neutral player in the innovation process, is generally accepted as a co-facilitator of the platforms. Also here, the research institute is one of the platform actors, responsible for the development and dissemination of new knowledge. The regional governor presides over the platform meetings at the provincial level. If he is not present, the secretary general or the president of the farmers' organization steps in. The research institute prepares and facilitates the meeting in terms of content, give reflections, and orients the activities and discussions. The local representative of the farmers' organization presides over meetings of the local platforms.

Although the platforms are still at an early stage in **Cameroon**, the initiators acknowledge that different stakeholders can take on different facilitation roles. Clearly, the national research institute has taken the initiative and still plays an important role in brokering innovation. At the national level, the research institute, the farmers' organizations and two sector organizations coordinate activities, lobby, negotiate, and mediate conflicts among the platform actors. At the

local level, platform leaders, local extension staff and outside resource persons help organize platform activities, raise awareness and handle communications.

In a filmed interview, Koungou Mbega Emmanuel, president of the Ngat innovation platform, explains his role in the local cassava platform and how he ensure linkages with the different stakeholders in his area. The national farmers' organization and the national network of horticultural producers have taken up thematic leadership around linking local producers to industrial cassava processors. Especially the national farmers' organization plays an important role in advocacy and lobbying. This has led to the creation of the national cooperative of cassava producers, representing cassava producers at the national level.

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Towards a facilitation strategy

It seems obvious that the organization responsible for implementing and managing a project, takes the facilitating role. But the examples presented in this book illustrate that this is not always so; in a number of cases, the research organizations have collaborated with, or delegated facilitation roles to, other actors. The facilitator may change over time, and certain facilitation tasks may rotate among the platform actors: for example, one actor may be responsible for convening and chairing the meetings, while someone else may take on the tasks of taking minutes and monitoring progress.

Across the DONATA cases, we find a mix of examples of who is doing the facilitation: research and extension organizations, NGOs and farmers' organizations all act as innovation brokers, and often they work in combination. In **Cameroon**, the platforms are explicitly working towards a model with multiple brokers. Thus, we observe different strategies to facilitating innovation platforms in the different countries, one not necessarily being better than the other. The emerging facilitation strategies depend on the following factors.

Availability of alternative organizations In some countries, such as Burkina Faso, The Gambia and Cameroon, the presence of a strong NGO, farmers' organization or extension agency has provided opportunities to engage these organizations in the facilitation of the platforms. Of course it helps if researchers have already established linkages to such organizations during earlier projects. In other countries, such as the Republic of Congo, where such organizations are not present, the research institute is forced to take up the brokering role. In Sierra Leone, the national research institute itself had a strong extension wing that was able to run with the facilitating role.

Acceptability The facilitating organization needs to be neutral and have the credibility and authority to be accepted by all stakeholders. Research institutes, NGOs and extension agencies are generally accepted as neutral in the sense that they do not have commercial interests in the value chain. In **Burkina Faso**, the farmers' organization, representing an important group of chain actors (the farmers), took up the facilitation and was still accepted by the other stakeholders. The farmers' organization was not itself a cooperative or enter-

prise and has no commercial interest in being involved in the platform. At the same time, it is generally accepted that smallholder farmers are often the major beneficiaries of innovation processes that are established with the purpose of economic development, income generation and food security. Having a farmers' organization as the facilitator ensures the focus on smallholder producers and can contribute to building up agency amongst the farmers.

Competencies Facilitating innovation platforms requires specific competencies. These may be related to value chain development, facilitating multi-stakeholder processes, conflict management, lobbying and advocacy, and action research (Nederlof et al. 2011). With these competencies in mind, research organizations are not necessarily the most logical innovation brokers. Furthermore, all these competencies may not be present in just one organization. Hence the need for collaboration between NGOs, farmers' organizations and extension agencies. NGOs and farmers' organizations, in particular, are recognized for their ability to work in a participatory way, adopting flexible approaches to agricultural development; extension organizations, on the other hand, tend to apply top-down transfer-of-technology approaches (see Chapter 1 for more on the evolution of thinking on agricultural research and development). In **The Gambia** for example, the Agricultural Training Centre, a local NGO, is trusted and appreciated by the local actors, is seen as neutral, and has extensive experience in community development, agricultural extension and training.

Level Some organizations are better positioned to work at a certain level than others. For example, NGOs and extension organizations have often the required experience to work with farmers and farmers' groups directly at the grassroots level. The Fédération Nian Zwè farmers' organization in **Burkina Faso** is organized in provincial, communal and village associations, which ensures the linkages of the platforms to the grassroots.

So the choice for a specific facilitating organization or a combination of organizations depends on many factors. Facilitation of innovation platforms includes a number of roles which require specific competencies. Often, research organizations do not encompass the right combination of skills and attitudes that allow them to take up all facilitation roles independently. Hence the need for other organizations to step in. The empirical experiences in The Gambia, Burkina Faso and Cameroon demonstrate effective combinations of different organizations sharing facilitation.

Stakeholder interaction

Building relationships through improved knowledge and information sharing is one of the main functions of an innovation platform. In Chapter 10, we focus on how knowledge and information are shared with external actors. Here, we look at why and how stakeholder interaction, knowledge and information sharing among platform actors happens and how it can create a favourable environment for innovation. Experiences from Burkina Faso, The Gambia and Mali show some of the benefits of enhanced stakeholder interaction, includ-

ing the creation of mutual trust among platform actors, as well as improved accountability and transparency through the supply chain. In this way, these multi-stakeholder processes contribute to improved systems coordination, joint learning, better and easier access to services, and the establishment of value chain linkages for improved market access. Some of the outcomes relate directly to the entry point pursued by the innovation platform. In other cases, improved stakeholder interaction has led to unforeseen results and unexpected outcomes: surprises, which we refer to as "emergent properties" (see Chapter 2 for more on this).

The film shows how Ebrima Njie in The Gambia was able to gain an income from maize due to newly established contacts through the innovation platform.

goo.gl/tyBvQ4

The experience of Azize, a maize producer in **Burkina Faso**, shows how stakeholder interaction in an innovation platform can contribute to the development of the seed sector (Box 6.1). The innovation platform contributed to transparency and accountability in the certification of seed. This was not directly linked to the platform entry points but nevertheless appeared an important innovation that helped to provide structure to the seed supply chain and improve the position of smallholder producers. This is an example of an **emergent property** as a result of stakeholder interaction – an unexpected outcome of the innovation platform.

Stakeholder interaction also contributes to building trust, and can result in more efficient supply chains, as shown by Boxes 6.2 and 6.3. Box 6.2 illustrates how the platform has enabled a seed producer in Burkina Faso to do business with maize grain producers directly, rather than through the extension service. Trust and confidence among these key value chain actors were inspired by their getting to know one another through the innovation platform.

goo.gl/aBjJZS

The example in **Mali** (Box 6.3) shows how distrust between maize producers and a seed company was overcome after brokering by the local mayor. This led to improved relations between local seed producers, the seed company and grain growers, and increased the availability of quality seeds in the area. The brokering role taken up

Photo: Geneviève Audet-Bélanger

Innovation platforms can help increase transparency: A Heineken beer advertisement in Sierra Leone"

Box 6.1 Creating transparency and accountability in seed inspection

"As member of the farmer organization Fédération Nian Zwè and before we started the multi-stakeholder innovation platform in maize value chain and food system, I used to cultivate maize for food and seed and we used to pay CFA 10,000 (around $20) for the inspection and certification of our seed maize by the national seed service. When we started to organize ourselves in multi-stakeholder innovation platforms in value chains and food systems through INERA, we discussed the issue of seed inspection and certification payment by producers to the national seed service. Through the innovation platform we agreed with the national seed service that small-scale producers who depend on rainfed agriculture should not pay for inspection and certification but those who use irrigation in addition to rainfed agriculture in seed business should pay to offset the inadequate budgetary allocation to the national seed service by the government. The innovation platform therefore brought about transparency and accountability in smallholder inspection and certification of quality seed by the national seed service which hitherto was not accountable to producers on the fees it collects."

– Azizee, maize producer, Burkina Faso

Box 6.2 Becoming an independent seed entrepreneur

"Having been laid off by the INERA Farakoba station in Bobo Diolasso as a technician, I decided to use the knowledge I acquired by going into farming with the vision of becoming a village seed entrepreneur. I grew cereals, including maize, and legumes such as cowpea, and became a member of the Fédération Nian Zwè. I used to exhibit my seed at the government extension service offices to sell to other farmers because they already have confidence in the extension service. When we got involved in the innovation platform in maize value chain and food systems through INERA facilitation, I gained recognition, confidence and trust among the innovation platform actors and my seed were bought without the need to use the offices of the extension services. I no longer exhibit my seed at the extension service offices and today, I have opened a new seed and input business shop in my village, which is located on the main road into and out of the Province of Sissili. I had one tractor in 2008 and by 2012 I bought another tractor. I currently employ a number of labourers and salesmen and I receive interns from the government."

– Kabore Karim, seed entrepreneur, Burkina Faso

Box 6.3 Seed system innovations in Mali: Building trust

In Mali, famers routinely plant seeds they have saved from the previous season because of the affordability and because of their resistance to "imported" seed which metaphorically meant genetically modified crops in farmers' perceptions. This has restricted their interaction and relationship with small local seed businesses.

To break this negative perception, the maize value chain innovation platform in Bougouni and elsewhere in the south of Mali started to engage with Faso Kaba, a local seed business that was supported by the Alliance for Green Revolution in Africa. The local mayor is also a producer who buys seed from Faso Kaba and is a member of the Bougouni innovation platform. Through his engagement, other maize producers on the platform gained confidence in the company's seeds. That was the beginning of a strong relationship and sound business opportunities between local seed businesses and producers.

To further strengthen this relationship and offer hope for small-scale producers, Faso Kaba contracted emerging seed producers and entrepreneurs within the innovation platform and offered them credit in the form of fertilizer. The company buys quality seed from them, transports it to its facility near Bamako, and cleans and processes it. It does this even though it has its own seed farm. The emerging seed entrepreneurs in the innovation platform reported that 80% of their seed was bought by Faso Kaba, and only 20% by other local businesses.

by a key platform actor (the mayor) mediated a problem between two of the other actors (a seed producer and grain growers), to the benefit of the value chain as a whole. Trust replaced uncertainty, and the system flourished as a result. The company was a "champion" of the platform in supporting the new seed entrepreneurs, while the mayor acted as a broker between the two parties, mediating a solution that worked very well for everyone (see Table 6.1 for more on the roles of facilitation). This is a nice example to illustrate how facilitation roles can shift from one actor to another within an innovation platform.

goo.gl/RfgkNW

Local-level innovation platforms can also play an important role in improving value chains and access to markets by strengthening relations between value chain actors. After production issues were addressed by the innovation platform in **The Gambia**, marketing became the next new challenge. Through the platform, a transporter member of the platform benefits from a secure supply and in-time payment. That has allowed him to invest in maintaining his vehicle and to buy another one (Box 6.4 and film). This example illustrates how the Gambian innovation platforms have shifted from their entry point to entering new domains and addressing new challenges – in this case, marketing.

In **Sierra Leone**, increased production led to a need for greater processing capacity. The story of Ms Jalloh (Box 6.5) shows how improved stakeholder interaction through the platform facilitated the platform actors to specialize, leading to a more efficient cassava chain and higher incomes for producers. This is another example of the shift from phase 2 to phase 3 in the life cycle of an innovation platform, as described in the previous section of this chapter.

In Chapter 2, we argued that dealing with complexity and risk requires resilience, adaptation and flexibility, and that innovation platforms can be a mechanism for handling uncertainty. The capacity to adapt to changes in the environment is one of the most important features of resilient institutions. These changes could be shocks or trends, policy-related, ecological or economic. Stakeholders in the innovation system need to monitor and address

Box 6.4 A Gambian transporter's experience

"Before the maize innovation platform in my community in the North Bank region, my vehicle could not easily do a journey of 24 km to deliver farm produce to the nearest market in Essau. Furthermore, I did not have enough farm produce to transport to the market and could not therefore afford regular maintenance for my vehicle. With my active involvement with the maize innovation platform actors in my community, I now have enough of the highly demanded yellow grain maize to transport from the farm gate to the market and frequently too, and I get paid on time. I now receive information through information brokers on the availability of farm produce and goods to transport. Through increased business opportunity, I have been able to borrow D50,000 ($1,300) and D120,000 ($3,100) respectively to maintain my vehicle and in a position to pay a second hand vehicle. In order to optimize my income and improve my family welfare, I am now both a transporter and maize producer through the innovation platform."

– Bram Kebbeh, transporter, The Gambia

Box 6.5 From a jack-of-all-trades to a master of one

"Before we were organized in multi-stakeholder innovation platform, one person produced, searched for markets to sell, and even processed the cassava tubers, and yet this person was not able to optimize productivity or income. When we joined the cassava value chain innovation platform we reduced the multiplicity of tasks by one person. We now are better linked to each other in the cassava value chain; we know who the processors are, who the marketers/traders, producer, transporter, are, etc. We know where to find each other and when to meet. The labour, time and complexity requirements of cassava production and market access are minimized and we are now one family."

– Ms Jalloh, innovation platform actor in Sierra Leone

those changes jointly. The changes may require immediate concrete action or restructuring of the system.

In **Cameroon**, the actors in the innovation platforms were confronted with a change of government policy on the recognition of farmers' organizations. Owing to the large varieties of farmers' organizations, the government decided that only officially registered cooperatives could benefit from government assistance. Hence, all farmers' organizations had to transform themselves into cooperatives through legal procedures. One of the women's unions in the locality of the platform registered as a cooperative, and for reasons of loyalty the leaders decided that cooperative members could not be a member of another organization at the same time. They insisted that their members withdraw from the innovation platform. As a result, a significant number of rural women had to decide to choose to belong to one or the other. This led to the DONATA-supported innovation platform suffering a drastic reduction in participation. For the DONATA platform it became important to show that they were not competitors of the cooperative and that there could in fact be important synergies if people were able to be active in both the cooperative and the platform.

Relative influence of actor groups

Innovation platforms involve people or categories of actors with often highly divergent levels of influence: some are relatively vulnerable, while others are more powerful. Platforms are mechanisms to bring together different views and interests and to provide voice to traditionally less influential stakeholders. As we have stated earlier, they can act as a countervailing force against powerful actors to support, for example, smallholder farmers. Discrepancies in influence and power are a fact of life in innovation platforms. But failure to resolve power and representation issues may seriously harm the functioning of a platform and its ability to meet its objectives. Such imbalances can cause conflict or affect the priority given to issues, the selection of entry points, the design of interventions, and the adoption of interventions (Cullen et al. 2013). Stakeholders might disengage from the platform if issues related to power and influence remain unsolved.

Managing power and considering the relative influence of different actors is an important role for a facilitator. The perceived level of influence of stakeholder groups is related to their socioeconomic position, but also by their competencies and their access to information. Weaker categories of platform actors may need help to make sure their voices are heard, while keeping the more influential platform actors on board (Nederlof & Pyburn 2012). But influence is also about numbers, which actor groups hold sway, and decision-making power. Interestingly, it is not always the high-level or wealthiest actors who are perceived as most influential.

In order to understand the dynamics at play within the platforms, the teams doing the field work for this book used a participatory tool when meeting with platform actors. To assess the level of influence, prime mover "septagrams" were created by the innovation platform actors in the six countries (see Chapter 2 on methodology). The results provide interesting insights (Figure 6.2).

The level of influence is indicated on a scale of 1 to 5, with 1 (near the centre of the diagrams) referring to "no influence" and 5 (on the outside) referring to "highly influential".

The diagrams show that in all the countries, producers and researchers have a high degree of influence within the platforms (scores of 4 to 5). The initial focus of the platforms on production-related issues technologies might explain the perceived dominance of producers. Their role in implementing and initiating the platforms puts research organizations in a relatively influential position compared to other stakeholders. Researchers promoted technologies to increase maize or cassava productivity among targeted producers. Thus they are seen as leaders within the platform.

The influence of other facilitating organizations is considerable: in The Gambia, Burkina Faso and Mali, extension services (public and NGO) and development NGOs play an important facilitating role and are relatively influential. In countries where chain activities other than production are selected as entry points, e.g., processing, marketing or seed supply, the stakeholders directly concerned appear influential. In the Republic of Congo, for example, processors are regarded as such; in Burkina Faso, it is traders; and in Mali, the seed company. In The Gambia, the only country with a policy-oriented platform, the role of policymakers is important. This applies also to Burkina Faso, where policymakers attend the provincial-level platforms and play an important role in them.

The influence of extension services varies. In some countries, such as the Republic of Congo, Cameroon and Sierra Leone, the influence of extension services and NGOs is moderate: they play an important role in terms of mobilizing farmers and the dissemination of information and new practices, but they are not influential in setting the agenda or objectives of the platforms. In Mali, but especially in Burkina Faso and The Gambia, extension service providers and NGOs are more influential. In The Gambia and Burkina Faso, NGOs play an important facilitating role which provides them with significant influence.

Service providers such as financial institutions and transporters are less influential in most countries. Only in Sierra Leone, blacksmiths and transporters have a relatively higher degree of influence. This can be linked to the deliberate efforts of the platforms in Sierra Leone to improve farm-gate processing as a

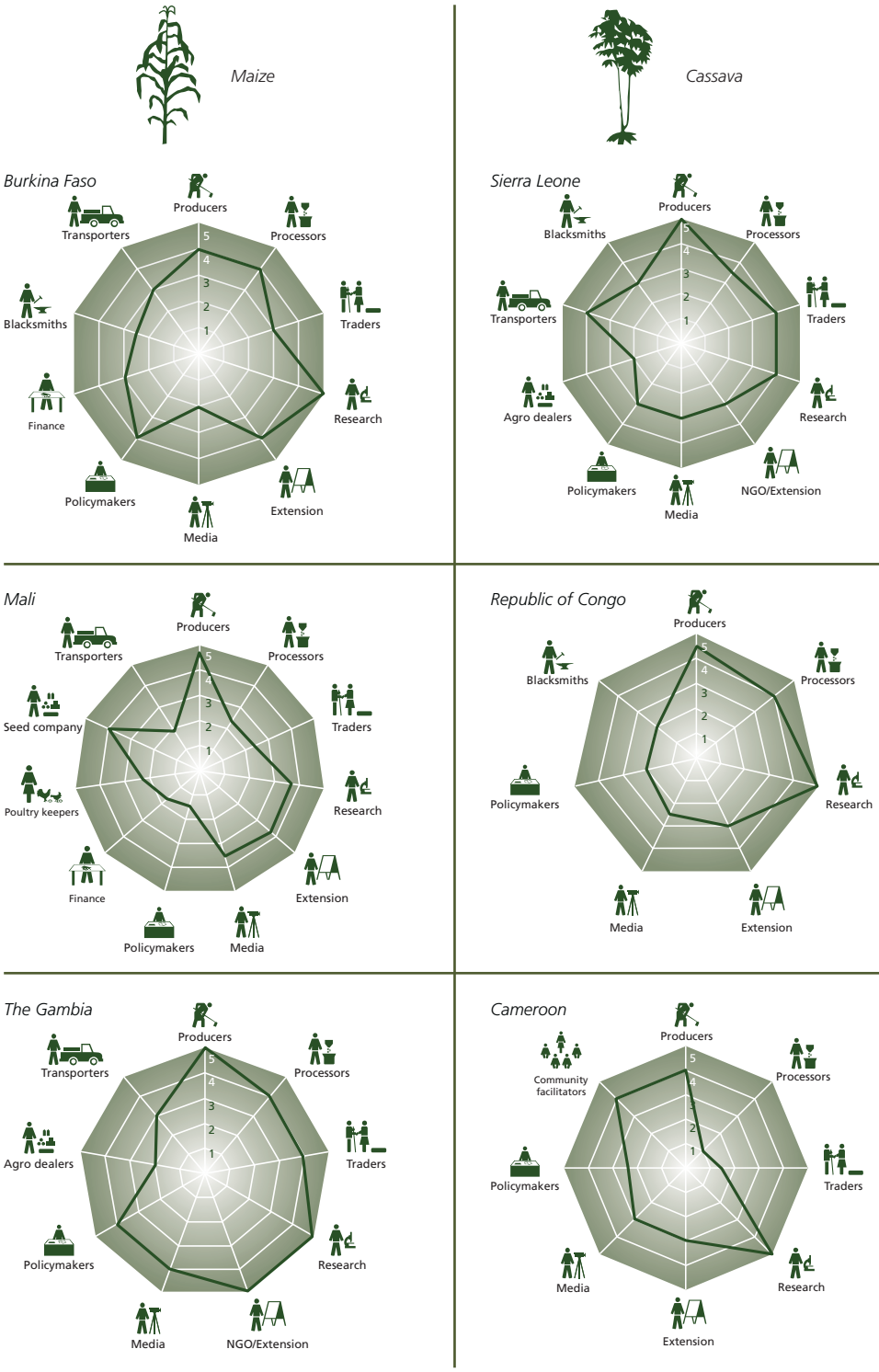

Figure 6.2 Septagrams for innovation platforms in six countries

first step in the value addition of cassava tubers. There is a need for appropriate technologies, and blacksmiths play a central role in the development, adaptation and fabrication of the required tools. In other countries, service providers are indeed important, but are not involved in experimenting with or adapting the services or products.

The media are generally seen as less influential: their role is mainly to share information with the different stakeholders, especially to farmers and the larger public. Their influence on decisions and their capacity to mobilize other stakeholders is limited.

As research-initiated and -oriented platforms, it is logical that research organizations and extension are relatively influential. But if the innovation platforms are geared towards cassava and maize sub-sector development, the position of the chain actors needs to be strengthened. Currently, processors in Mali and Cameroon, and traders in Burkina Faso, Mali, Cameroon and the Republic of Congo, have limited influence. With the recognition that markets are major drivers of innovation, it is important to engage these actors more actively and meaningfully.

In addition, it is important to look at the dynamics within stakeholder groups, and especially at the level of producers. Producers are said to be influential in most platforms, but how is their representation organized? Are women represented? Are their specific interests taken into account? What about other marginalized groups? Understanding power differences in power and influence is important, but will not prevent conflicts from arising. It is important that the actors and that facilitator understand the power relations. Box 6.6 shows how the facilitator can provide a space for actors to examine a problem and find a solution that meets the needs and addresses the interests of the actors involved.

Coordination in innovation platforms

Coordination is important in every aspect of sustainable development, as it affects guidance, processes, consistent management, cohesive policies, accountability mechanisms and the right to decide on particular areas of responsibility (Baltissen & Penninkhoff 2013). Innovation platforms are mechanisms for coordinating or governing agricultural development and innovation, operating

Box 6.6 Building trust through communication and careful facilitation

In Burkina Faso, producers and processors had agreed on a contract through which producers would sell their maize to the processors for a fixed price. However, the producers thought the processor was making big margins and was paying too little to the producers. Producers reacted by selling their maize to foreign buyers. The DONATA focal point did not intervene immediately, but decided to wait for the next season. He called for a meeting during which the problem was put on the table: together the producers and processors calculated the margins gleaned by different chain actors. In the end, all agreed that the price paid by the processor to the farmers was, in fact, fair.

This transparency allowed trust between producers and processors to be restored. For the following season, a new contract was established based on the joint calculations. The contracts allowed the possibility for adapting prices to reflect actual market prices, which would be monitored by both parties.

by bringing different stakeholders together (Mur & Wongtschowski 2013). Innovation platforms govern via explicit or implicit rules, processes and behaviour through which interests are articulated, resources are managed, and power is exercised among the stakeholders involved. Coordinating innovation processes is about management, the rights and responsibilities of decision-making, and accountability mechanisms (Mur & Wongtschowski 2013). The ways in which innovation platforms are governed is shaped by the people involved and can be quite diverse. On this topic we look at the different ways in which the national agricultural research institutes coordinated the innovation platforms, specifically **leadership and organizational structure** of the innovation platforms, and the degree of **formalization**.

Leadership and organizational structure

In the early stages of an innovation platform's life, leadership is taken by the facilitating or initiating organization. However, in many cases, leadership is gradually transferred to the other platform actors, either in a formal or informal manner. Leadership refers both to decision taking as well as the shaping or guiding of the process. In the examples below from Burkina Faso and the Republic of Congo, we see different forms of leadership.

In **Burkina Faso**, the regional platform meetings are presided over by the regional governor (*haut-commissaire*), the head of the provincial government), who chairs the platform. His status in society and in the political system allows him to fulfil this role, and, very importantly, gives the platform a higher status that generates commitment to attend, engage and invest. When the regional governor attends a meeting, others in the region have a moral obligation to attend as well. He is a natural, moral and official leader. The national agricultural research institute facilitates the platform meetings in terms of content: it provides reflection and orients the platform activities. All regional actors and representatives of local innovation platforms are expected to attend meetings. It is the regional governor who acts as the official leader while process and content leadership is shared among several other actor groups: research, non-public extension providers and the farmers' organization.

Local innovation platforms are presided over by the local farmers' organization leaders. The research institute or extension service (government or nongovernmental organizations) facilitate the content of the meetings at local level. These meetings are attended by traders, input dealers, and rarely the media, transporters, researchers, producers, and extension workers.

In the **Republic of Congo**, each of the innovation platforms has a coordination committee of three elected individuals who are responsible for the internal governance of the platform. The committee is comprised of a chairperson and vice-chair elected by the platform actors who represent the farmers or the processors, and a secretary who is an extension worker assigned by the regional or local head of the agricultural department. This committee organizes the platform meetings – this is their main role. The chairperson presides over the meeting; if he or she is not there, the vice-chair takes over. The secretary ensures that attendance is documented. One of the national agricultural research

institute's centres is the main facilitator and takes the lead on the content and process. Innovation platform actors, including researchers, participate in meetings. The role of the research centre is also to suggest solutions to the problems faced by the platform actors. The research centre is seen as the focal point for the innovation platform for outsiders.

In **Mali**, the national agricultural research institute facilitates all ten platforms and initiates meetings, in close coordination with extension services, which have a local presence. At every meeting the research institute delegates someone to chair that particular meeting. This is usually a farmer and often the *chef de village*. Most people attending the meetings are producers.

Each innovation platform in **The Gambia** has a secretary who keeps minutes and keeps track of member subscriptions. The secretary ensures that all information is shared with the people involved in the platform, and submitted to the regional level. Technical information, such as dates for planting and applying fertilizer, is also recorded. These data are important for the platform so that the actors involved can verify what happened, and can explain why. They are also important for DONATA's monitoring.

In **Sierra Leone**, coordination happens at two levels: at the level of the farmer groups, and at the coordinating committee level. Farmer groups (up to 100 members) have written constitutions that are deemed necessary in order to have a system to handle any problems arising within the group. Every farmer group has a democratically elected executive. At the regional level, there are coordinating bodies with platform representatives from different stakeholder groups. The bodies meet regularly, and on behalf of their constituencies, they negotiate prices and create awareness on eminent issues. To ensure good working procedures, they have developed rules and regulations that are agreed and referred to by the people involved.

Formalization

Formalization of an innovation platform refers to the legal registration of the platform, the existence of formal, written ground rules, or as we have seen above, the existence of a formalized leadership structure.

Formalization in terms of registration can have different functions that contribute towards creating space for the platform to contribute to changes in the maize and cassava sub-sectors. In **Cameroon**, the registration of the innovation platforms as formal entities is a government requirement affecting their eligibility for support from government institutions, as the Ministry of Agriculture and research institutes. So registration is essential for the DONATA innovation platforms in this country. But registration is not always desirable: in some cases it can act as a constraint. **Mali** and **Burkina Faso**, for example, opted not to register their platforms as formal organizations as this would hamper flexibility and responsiveness. The research representatives in both countries express concern that registration would fix who could participate in the platform, whereas the open and responsive character of existing platforms is highly appreciated. They see the potential need to engage new actors, and want the flexibility to do so: "Innovation platforms are dynamic and should

remain dynamic," they say. These are some of the reasons to justify the decision to register an innovation platform, or not. They are highly context-dependent.

Another aspect of formalization is the internal functioning of the innovation platform – the constitutions and agreed, written ground rules that guide and set the parameters for actor interaction. While non-registration is desirable for innovation platforms in **Burkina Faso**, written ground rules are signed by all involved, including the regional governor, the chairperson of the farmers' organization, the deputy director of the national agricultural research institute, and the DONATA focal point. Likewise in **The Gambia,** platforms have ground rules and constitutions both at the regional and local levels. This is distinct from the **Republic of Congo** and **Mali**, where there are no formalized rules or regulations. The coordination committee (Republic of Congo) or the *chef de village* set the rules during meetings. In Mali "rules of politeness and good behaviour" apply, rather than written regulations. Reports of meetings – *le process verbale* – are systematically made for all meetings and are sent to all actors involved. They always include an attendance list and the addresses of participants. Again, the need for formal ground rules, constitutions and reporting varies from one country to the next and is largely driven by the political and institutional context within which an innovation platform is operating.

Conclusions

The facilitation of stakeholder interaction, the core of the DONATA interventions, is taken up by a variety of organizations that assume a wide array of facilitation tasks. The facilitator contributes structure and process to stakeholder interactions. In all countries, the national agricultural research organizations initiated the platforms and still play an important facilitating role, especially in Sierra Leone and the Republic of Congo. In other countries, we see that research has handed over part of its role to other organizations, including NGOs, farmers' organizations and extension services, and often to constellations of organizations. In the scoping and preparation phase, the research organizations were the main facilitators, but in phases 2 and 3 of the innovation platform life cycle, other organizations are pulled in as facilitators (see Figure 6.1). In all countries we see that research organizations continue to play an important role as facilitators, but also as providers of new knowledge and technologies.

The choice to engage other organizations or combinations of organizations in the facilitation depends on a number of criteria. The competencies of the organization play a role; often NGOs or farmers' organizations are better placed and more experienced to work on grassroots level. They often have experiences with participatory approaches and value chain development, and are well connected with local stakeholders. They often have presence at more local levels. Another important criterion is whether the organization is accepted as a facilitator by platform actors. In different countries we have also seen the importance of engaging authorities. This can contribute to the commitment of other stakeholders and lends status to the platforms.

The degree of influence of research organizations remains significant compared to other stakeholders. Also producers are perceived as influential across all country cases. This is due the fact that the initial entry points of the platforms were almost everywhere production-oriented; research organizations, the initiators of the platforms and managers of DONATA, were promoting specific technologies aiming to increase maize or cassava productivity among the targeted producers.

Trust among stakeholders, transparency in value chains and mutual accountability are among what we refer to as emerging properties of platforms – the surprises that happen through synergies when people are brought together. In Burkina Faso and Mali, for example, we saw some fine examples of how improved stakeholder interaction contributed to increased transparency and accountability in the seed supply chain and in the relations between producers and traders.

A certain degree of platform coordination is required to ensure that the platform can function and makes progress. Leadership in platforms can be assumed by different actors. In a number of platforms, democratically elected leaders are responsible for internal coordination, including the organization and chairing of meetings. In other cases, local authorities like the regional governors in Burkina Faso, are responsible. The latter can contribute to ensuring stakeholder commitment. In addition, authorities can play a brokering or mediating function in cases of mistrust or conflict.

Formalization can affect the flexibility and internal dynamics of an innovation platform. In Mali and Burkina Faso, the platforms are therefore not registered. In other countries, registration contributes to acknowledgement of the platform, which can contribute to its effectiveness. Most platforms, except for those in Mali, have some kind of ground rules that provide structure to the stakeholder interaction. The rules define the roles, leadership and regulations at platform level. When it comes to formalization, context matters. The need for and benefits or costs of formalizing depend heavily on the institutional context in the country or region that acts as a home to the innovation platform. This needs to be understood well in order to craft the most logical constructions for the platform and value chain being considered.

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7 SUSTAINABILITY

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Photo: Geneviève Audet-Bélanger

7 SUSTAINABILITY

Rhiannon Pyburn and Remco Mur

A first critical question when we turn to the topic of sustainability is the sustainability of what? What do we mean by sustainability? We distinguished three categories of sustainability relevant for innovation platforms: sustainability of the **changes** that happen through the platform; sustainability of the **platform itself** as an entity; and, the sustainability of the **capacity to innovate** among the actors participating in the platform.

The first – the sustainability of the changes realized through the innovation platform – refers to changes in production systems, chain operations, specific relations between certain actors or service provision, for example. These relate to both the technology that the platform promotes and to the results of the institutional changes (relationships, ways of operating and rules and regulations) triggered by the platform. How sustainable are the technologies, relationships, institutional arrangements and agreements that have been made? These changes are the outcomes or hard results of the innovation platform activities. While these questions are interesting, they require longer-term monitoring of a specific technology or relationship. They are not the focus of this chapter. We focus instead on the second and third categories:

- The sustainability of **the platform itself** as a network of actors addressing shared problems and opportunities and find new ways of doing things.
- The sustainability of the capacity to innovate among stakeholders.

Sustainability of the platform What happens when, over time, some objectives of the innovation platform have been successfully met, but the initial funding period is reaching its end? Can it, and should it, continue? Is the innovation platform sustainable and self-perpetuating? If yes, then how? If we assume that it is important to sustain an innovation platform as a place where innovation capacity is situated, then we must draw lessons on how to enhance the sustainability of innovation platforms in and of themselves. This cluster of issues focuses on the innovation platform as a mechanism for stakeholder interaction: a way for stakeholders to address shared problems and constraints in innovation in a sub-sector.

Little is documented on the factors contributing to the sustainability of an innovation platform. Coates and Rogers (2011) distinguish four key aspects of sustainability in this regard: sustained **motivation**, sustained **resources**, sustained **capacities**, and sustained **relationships**.

Sustained motivation refers to a continued commitment and motivation of the actors involved and the generation of a sense of ownership of the platform by the actors involved.

Sustained resources is first and foremost about funding and financial sustainability, but also about the human resources required to continue with an innovation platform.

When it comes to **sustained capacities**, we distinguish three levels: individual, organization and institutional capacities.

- **Individual** capacities include facilitation (who has the capacity to manage and facilitate the platform beyond the end of the programme?) as well as the capacity of actors to engage in platform activities.
- **Organizational capacity** refers to the level of institutionalization and **formalization** of the innovation platform; **transparency** and good, real-time communication; **good governance**, including regular meetings, communication and so on; and a capable **internal organization** structure.

- **Institutional capacities** refer to policy, regulation and an enabling environment including the involvement of and recognition by political and administrative authorities and links to the relevant ministries (**policy spill-over**). This aspect is taken up in detail in Chapter 8 on policy pathways.

Sustained relationships means that the actors involved in the platform have come to know and trust one another – their relationships are consolidated and sound and they know what to expect from one another. Also this related the multi-stakeholder nature of an innovation platform: different actor groups are interacting and learning together.

These are some of the elements we will explore in relation to the innovation platforms within DONATA as we proceed through the chapter. However, this category of sustainability – of the platform itself – begs another question: does it make sense to keep a platform operational once the problems and opportunities it was created for (in DONATA terminology, the "entry point"), have been sufficiently addressed?

Sustaining innovation capacity We need to distinguish between sustaining an innovation platform and sustaining innovation capacity. The latter might not require continuing with the platform per se. Instead the focus is on sustaining actor interaction in a sub-sector and ensuring concerted action if and when required, for example, when needed as problems or opportunities arise. ILRI recently described capacity to innovate as being "like the cooking process in the pot. It is where individual platform actors, and the platform as a whole, develop the abilities to find solutions to problems and to respond to opportunities" (Boogaard et al. 2013). The authors go on to identify some key elements of innovation capacity including: "self-organization, learning new skills, changing mindsets, valuing others' roles in innovation, having a holistic view, being able to adapt to changing situations, creating new ideas, recognizing opportunities, being proactive, using indigenous ideas, and looking to the future" (ibid). We explore what needs to happen in order to build and sustain the capacity to innovate amongst stakeholders in a particular sector.

This chapter addresses an often-overlooked but major concern for any time-bound project: that of sustainability and what happens after the project withdraws. In project-based innovation platforms, this is a key concern of the stakeholders involved. Existing literature tends to focus on setting up and

facilitating innovation platforms, rather than sustaining innovation capacity over time or keeping the platforms active. As such, the various strategies and considerations are worth delving into.

As of July 2013, six months remained for the innovation platforms as part of an operational project, though a no-cost extension was being discussed that would allow support to continue until the end of 2014. But even with an extension, the time for the national agricultural research institutes to exit was around the corner. This chapter looks at plans for continuing the innovation platforms and how and whether this is possible without current project support. We look to the innovation platform case experiences of the book presented in Part 1 to see how sustainability is being addressed. The chapter wraps up with some conclusions related to sustainability, and makes the link to policy pathways (Chapter 8). The broader question is about how a project can extract itself without the innovation system losing its capacity to innovate. Let us take a look at how sustainability is being, or could be, addressed at this juncture in the DONATA cycle.

Sustainability of the platform

The first question is whether or not to continue – when and why should a platform continue, and when should it be left to fade out. From there we look at what motivates participation and the role of incentives in sustainability. We then turn to resources – the financial side of continuing with a platform: how can this be managed, and whose responsibility is it? Finally we look at who takes the lead in continuing the innovation platform, including who has the capacity required to facilitate effectively.

To continue or not to continue?

A good case can be made for an innovation platform to be temporary and for the value of such ephemeral constellations. That is to say, the come-and-go, non-formalized character can be a real asset for the development of a sector: those people who need to, come together for a particular objective. Once that objective has been met, the relevance of the platform continuing is questionable. Gildemacher et al. (2011:61) distinguish a number of good reasons that an innovation platform need not continue to function as a structure:

- It has met its objectives and done what it was set up to do.
- It is no longer worth the investment – its contribution to innovation ceases to be significant.
- There is no motivation to continue among the actors.
- Other interaction mechanisms fulfil the mandate.

These are all good reasons to let an innovation platform come to a close. The purpose of a platform is not to create another structure or organization or permanent level of bureaucracy. It is to bring key people together address a particular opportunity or bottleneck and find new ways of dealing with it.

Therefore there is little merit in keeping an innovation platform going just for the sake of it. These constellations should be dynamic both in terms of the actors involved as well as the issues being addressed.

Typically, innovation platforms stop functioning due to less conscious choices. Gildemacher et al. (2011:62) mention some common reasons, including: changes in incentives for actors to participate (e.g., no more per diems); loss of confidence by actors involved due to poor or no facilitation; if a single party hijacks the agenda (power dynamics); the value of the innovation platform is not recognized; poor representation of key groups; a lack of organization at local or national levels; the innovation platform has become a mere talking shop and no longer contributes to real-life innovations on the ground.

For actors in an innovation platform, sustainability matters (Box 7.1). Livelihoods and decision-making for the future may depend on the ongoing functioning of the platform. So the issue needs to be taken up with considerable care. And if an innovation platform as an entity will not continue, exit strategies, "grandfathering" or "sunsetting" activities and functions may be important for the actors involved. By grandfathering we mean that an old rule or way of doing things continues to apply to some existing functions or situations until they are complete, while a new set-up will apply in the future. Sunsetting means that a given situation (rule or way of working) will continue until a given date, at which time new parameters will come into play.

In five of the cases in this book (Republic of Congo, Cameroon, The Gambia, Mali and Sierra Leone) the intention is for the innovation platforms put in place by DONATA to continue. In the sixth case (Burkina Faso) this is also possible. While the innovation platforms are not formalized, the focal point in **Burkina Faso** is confident that the quarterly meetings will continue though, he is less certain about the continuation of the innovation platforms in their current form.

Conditions for sustaining the innovation platform vary across the cases. For example, in **Cameroon**, as the innovation platforms were put in place only in July 2012, another 5 years are estimated to be needed to meet the initial objectives. This is because understanding and capacity need to be built about multi-stakeholder processes at different levels, including within the national research institute. And further, cassava has a long cropping cycle: the distribution of cuttings, multiplication and other steps require time. The innovation platform develops alongside this process, starting with production then moving into processing, commercialization, marketing and trading. The research institute in Cameroon is looking into a different structure for continuing with the innovation platform, making efforts to strengthen synergies between actors with the objective of becoming autonomous

Box 7.1 Sustainability matters

Some innovation platform actors in Sierra Leone are worried about the future.

- **Andrew Conteh** resigned from his teaching job to join the innovation platform as a trader. He expressed concern over the sustainability of a regular supply of processed products to the marketing innovation platforms.
- **James M. Sesay,** a producer, expressed doubts about getting a market for his tubers since most cassava processors are over-stretched with processing.

– Lansana Sesay, Sierra Leone

and achieving food security and developing further. **The Gambia** has also recently begun with innovation platforms; the platform already has a continuation plan via the West Africa Agricultural Productivity Programme, in which the national agricultural research institute also participates.

If the decision is taken not to continue the platform, then consideration of exit strategies is also necessary: how can an innovation platform be dismantled without diminishing the sector's capacity to innovate? How can the lead organization extract itself from that role without bringing the platform to a standstill? Exit strategies along these two lines are also important considerations in the sustainability discussion. However, the cases in this book were not looking at exit, but rather at re-situating themselves among the actors in the sector, so we will not go into depth on exit strategies in this book.

Incentives to go on engaging

A key factor in the continuation of an innovation platform is whether the stakeholders involved perceive benefits from participation: what Coates and Rogers refer to as "sustained motivation" (2011). This applies as much to farmers as it does to researchers, processors and others in the platform.

A noted benefit for the chain actors, starting with the farmers, has been that their participation in the platforms has helped them to get organized. This was the case in the Republic of Congo and Cameroon. In **Cameroon**, groups have to register as cooperatives to qualify for government support; cassava chain actors within the platforms have formed cooperatives to do so. In other cases, the organization of producers has been both an incentive for and a benefit from participation in the platforms. In **The Gambia**, the social cohesion provided by the innovation platforms is an incentive for farmers to continue their participation (Box 7.3).

Another benefit for farmers in the production platforms in **The Gambia** is that the better seed varieties have reduced households' food insecurity and increased their income. Their diets have improved and become more secure as they have started using recipes to make dishes from maize. Maize has become accepted as a primary household food, like rice. This can be attributed in part to the skills acquired by the processors through training provided via the platform. The processors trained other women in the communities. Improved food and nutrition security is thus an incentive for actors to participate in the Gambian innovation platforms, especially at the community level.

Box 7.2 Support breeds participation

"During the crop failure of 2011, after germination failure with our early millet farm, my father the Alkali of the village sent me to Abdul Azize Secka, a platform actor, to get yellow maize seed. I was not a member of the platform at the time, but after harvest, the yield was so good (2.4 ton/ha)! It was able to keep us going until the next harvest in 2012/13 which has never happened in our household in all of my adult years, supporting my father in the field. My story shows benefits of the platform in rendering help to other farmers in need. Azize supported us in a time of need."

– Mrs Sawou, Head of the maize processors in the Bah innovation platform, The Gambia, Interviewed by Ansumana Jarju, DONATA focal point, The Gambia

Box 7.3 Incentives for participation in cassava platforms in Sierra Leone

The innovation platforms have introduced new products like odourless fufu flour, high-quality cassava flour and *gari* soybean blended by the processing centre. They have created new markets and diversified the consumption habits of many Sierra Leoneans. They have a continuing commitment and the organizational structure to maintain strong linkages and reliable relationships among cassava value chain actors. Synergies among the actors have created a cohesive force that has the potential to overcome hindrances in the cassava value chain.

– Lansana Sesay, Sierra Leone

In Sierra Leone incentives for actors to participate in the platform ranged from new products and markets to better value chain coordination and consolidated value chain relationships (Box 7.3).

As the innovation platforms in Sierra Leone, grew, so did the need to make connections beyond the platforms. The livestock industry was not one of the initial categories of actors involved, however, they did enjoy some of the services offered by the platforms. The benefits were mutual: the platform actors also made money due to the services provided by the livestock industry. One example is cassava peelings, which the processors sell to pig farmers as feed. Another was the request by poultry farmers for cassava pellets to use as an ingredient in poultry feed. That request was important for the platform actors as it demanded a new product (cassava pellets) and offered a new market and a new source of income. These are examples of opportunities provided by the platform to actors who participate: they motivate and act as incentives that foster commitment to the innovation platform as a whole.

In **Burkina Faso**, we see another kind of incentive: securing finances at an individual platform actor level. In this case, the farmers have diversified their activities beyond the maize value chain to diversify their livelihoods and secure personal financial resilience (Box 7.4). With money earned through engagement in the platform, the farmers were able to earn an income from maize sales, save some of it, and use it to invest in forms of income-earning activities. Platforms have had a positive impact on the actors involved and they are encouraged to stay involved as part of a wider livelihood diversification approach, which protects them against commodity price fluctuations or similar ups and downs on their other income-earning activities

For the national agricultural research institutes, the incentive for continuing engagement in the innovation platform is the benefits to their ongoing work. Research benefits in several ways:

- **More relevant research** Getting farmers' perspectives makes the research more relevant and useable (according to researchers in the Republic of Congo); local knowledge is becoming an important input for contextualizing new technologies (in Cameroon).
- **Improved technology dissemination** The platforms improve the ability to transfer new technologies (Republic of Congo).

Box 7.4 Improving financial sustainability through diversification

Another aspect of sustainability is the diversification of producers' sources of revenue and the employment of women and youth by famers.

When a successful farmer (and platform actor) named Arzouma saw his maize sales fall, he decided that he needed to diversify his activities. He invested in building houses to rent out; they brought in 360,000 FCFA ($750) a year. His next venture was to raise 150 guinea fowl, which his wife takes care of. Every year he sells nearly 12,000 eggs worth 585,000 FCFA ($1,200). He also has a herd of 70 cows overseen by a Peul herder. He sells as least 10 of them every 2 years and makes another 4,000,000 FCFA ($8,400) in the process. Arzouma has also built a video club, a dance bar and a shop for charging mobile telephones that is run by his brother. Together these three activities bring in another 1,320,000 FCFA ($2,800) each year.

Dagano, another platform actor, has also diversified his activities due to the fall in maize sales. He has built houses for rent, bringing in 240,000 FCFA ($500) a year. He raises 300 hens, which lay some 36,000 eggs a year, worth 2160000 FCFA ($4,500). He also raises small ruminants and sells at least 20 a year for around 700 000 FCFA ($1,500). In addition he provides services (labour, transport of crops, sand and other construction materials), which he says bring in more than 3,000,000 FCFA ($6,300) a year.

– Taonda Sibiri, DONATA focal point, Burkina Faso

- **Higher profile of the national research institute** The platforms make the national research institutes' work more visible (Burkina Faso, Cameroon).
- **Trust building** Local actors trust in research more.

A sense of ownership of the innovation platform among the actors involved is also important for sustainability:

> *The innovation platform has also taught us the importance of becoming a single production, processing, marketing and transporting entity. That creates sense of ownership amongst platform actors rather than thinking that it [the platform] belongs to the National Agricultural Research Institute (NARI), DONATA, CORAF/WECARD or the Department of Agriculture. This is important for sustainability.*
>
> *– Ansumana Jarju, the DONATA focal point in The Gambia*

Resources to continue

Sustainability is "measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn" (OECD 1991). Another aspect of Coates and Rogers (2011) innovation platform sustainability is that of **sustained resources**. Does the innovation platform have the resources – human and financial – to continue? And where should the funding come from? (See also Chapter 11 for a discussion on innovation as a public good.)

Funding is an issue for sustaining an innovation platform. Often public or international resources are made available to start up innovation platforms in particular sectors: DONATA is a case in point. But these projects have a time horizon attached. The period for this initiative was 2007–13, with a one year

no-cost extension into 2014. But what happens then? Several possible routes emerge for how to fund ongoing platform activities, including internal participation fees, channelling income generated from the platform's activities back into the maintenance of the platform (member contributions), and funding representatives on an as-needed basis. These points are discussed below. Later in the chapter we also explore new project funding from external sources as a fourth channel.

Charging participation fees and using income generated from selling the platform's products collectively are two ways to fund the costs of keeping an innovation platform going. This is done in the Republic of Congo, Cameroon and The Gambia. In **Burkina Faso**, the approach is to find funding internally through actor contributions. Discussions are underway between the research institute and the farmers' organization to see how to cover the costs of meetings in the future. Likewise, in **Mali**, a private-sector actor within the innovation platform – the seed company – has already financed some meetings, and different options are being explored.

In **The Gambia**, seed for the first year of maize production for each platform is provided by DONATA. After that, the farmers participating in the platform collectively store seed; part is sown the next season, and the platform sells the rest. The money is used to buy pesticides and fertilizers for all producers involved. That means the producers in the platform use their own resources to fund the innovation platform activities after the first year. This is an example of sustaining the technological change (so it is not the focus of this chapter, but interesting to note nonetheless). In addition, all platform actors pay a fee to the regional platform, which is formalized. Elements for the sustainability of the Gambian innovation platforms are thus already in place (Box 7.5).

In addition, in The Gambia and Burkina Faso, the recent interest by national policymakers has the potential to lend much support to future activities (for more on this see Chapter 8 on policy pathways).

In **Sierra Leone**, members of farmers' groups support their representatives to attend platform meetings as needed. Platforms in **Mali** and the **Republic of Congo** also depend on self-financing by the platform actors (producer organizations, seed companies). In **Cameroon**, proposals are being written to secure funds that would allow the innovation platforms more time and resources to mature after the end of DONATA.

Box 7.5 Financial and structural sustainability in the Gambian innovation platforms

After the innovation platform had been operating for 2 years, the grassroots platform actors put forward the idea to formulate a constitution. They wanted to set rules governing the platform's operation. The constitution is a guide to platform actors to avoid internal conflicts and make the responsibilities of the executive clear. There is every indication that the constitution will help the innovation platform to be self-reliant and make it sustainable. This in turn will improve the socio-economic outcomes of the innovation platform while reducing poverty and increasing households' food and nutrient security. It also makes it possible to set up a bank account for the platform. A sum of D60,000 ($1,285) from participation fees alone has been paid into this account.

– Ansumana Jarju, DONATA focal point, The Gambia

Who takes the lead?

For those platforms that will continue, the next question is, "who will take the lead in facilitation and coordination?" This relates to Coates and Rogers' (2011) point on the need for **sustained capacities**. Because DONATA was initiated in each country by the national agricultural research organizations, the researchers played a basic role in the start-up of the platforms. In some cases, such as the **Republic of Congo**, the national agricultural research institutes facilitated the platforms. In others, the national agricultural research institutes facilitated the platform in collaboration with the extension service (Mali, Cameroon) or the extension unit of the research institute (Sierra Leone).

Notably, in Burkina Faso, The Gambia and Sierra Leone, research institutes are shifting away from the lead roles that they have played in starting the platforms. The question now is, "who (which organizations or departments) can take up the facilitating role? Where does the capacity to facilitate lie?" In **Burkina Faso** the platform facilitation in the future will be led by the Ministry of Agriculture and Food Security as well as the extension organization. In **The Gambia**, the research institute collaborated with NGOs and public extension when it came to facilitating the platforms, which will also continue. In **Cameroon**, external collaboration with the socio-economic departments of a university in Yaoundé supported platform facilitation: PhD and MSc students are researching facilitation through the platforms. Despite this, the day-to-day facilitation of the innovation platform in Cameroon is nonetheless quite weak: they do not yet have sufficient capacity to facilitate the platforms in Cameroon post-DONATA. These different constructions have different implications when it comes to which organization and which individuals have the capacity to lead facilitation once the project cycle comes to a close.

The opposite can be seen in the **Republic of Congo**, where the research institute continues to play a pivotal role in facilitation. In **Cameroon**, the initiative had the benefit of learning from colleagues in nearby countries participating in DONATA through cross-country learning visits and workshops (see Chapters 10 for more on this). From the start, the research institute in Cameroon set up the innovation platforms at a bit more of a distance so that exiting would be more straightforward. However, the effect of this cannot yet be seen, as the initiative is still in its early days there.

Sustaining the capacity to innovate

One aspect of sustainability is that the initiators do themselves out of the job of setting up and facilitating or coordinating the innovation platform. The goal is **sustained capacities** both within the innovation platform and more broadly (Coates & Rogers 2011). Sustaining the capacity to innovate is relevant both when an innovation platform itself continues, and when it does not. The latter captures an aspect of resilience: the capacity to innovate generated among value chain actors so that they can continue to innovate, network, learn and so on, even if the innovation platform is no longer in place.

This section recognizes that sustaining the capacity to innovate at is relevant at three different levels: the **individual** actors' capacity to innovate; the **organizational** capacity (e.g., of the national research institutes) to support innovation processes; and the **institutional** level, where spaces can be created to support the development and maintenance of national or regional capacity to innovate. At the individual level, we explore the capacity to network and engage with other actors in the value chain. At the organizational level, we look at the capacity to facilitate and new roles for national research institutes. The institutional level links to policy and structural support to feed the national-level capacity to innovate. We take up the first two levels – individual and organizational – in the paragraphs that follow. The third – institutional capacity to innovate – will be explored in more detail in Chapter 8.

Individual platform actor capacities

The platforms in Burkina Faso, the Republic of Congo, Mali and Sierra Leone are further along and have more developed innovation platforms than those in Cameroon and The Gambia, as they have been up and running since around 2008. N'Tji Coulibaly, the DONATA focal point for Mali, captured the situation for the future of the innovation platform in his country using the Malian proverb, *"Vous pouvez introduire deux personnes, mais vous ne pouvez pas les separer"* ("you can bring two people together but you cannot pull them apart"). Although there is no formal mechanism in place to continue the innovation platforms in Mali, he is confident that the interactions and meetings among the stakeholders will continue as the human capital has been built. Simply put, people now know one another. This fits snugly into the category of **sustained relationships** (Coates and Rogers 2011).

For Sierra Leone, the initial objective of the platforms have been met, but they are now moving into new activities and moving up the value chain (e.g., from just production, production and processing, to marketing). The innovative ability of platform actors and the high level of interaction among them can be seen as an effective means of sustenance of the innovation platforms. When the processors realized the profits from processing cassava into *gari* were low, they started processing cassava into high-quality cassava flour. That decision was appropriate and gave them more money. The invitation to nutritionists to join the innovation platforms met a felt need and was meant to enhance the sale of *gari* in the market. The nutritionist who became involved trained the processors as to how to add protein to *gari* using cowpeas and soybeans. Consumers preferred the resulting products over *gari* made only from cassava. The idea to process cassava leaves for the local and international markets came from the platform coordinating team, with the aim of maximizing profit in the cassava value chains. The idea was supported by the producer groups who would supply the leaves from their farms. We see in this case that the capacity to innovate has been internalized for these platform actors.

Different aspects of the individual capacity to innovate have developed and built in sustainability in the different cases. The individual capacity to innovate involves the capacity to learn, the confidence to speak out in multi-stakeholder

Box 7.6 Social cohesion, interaction and commitment as the glue for sustainability

"The innovation capacity of actors in the platforms has improved significantly since the start-up in 2008. Before being organized in multi-stakeholder innovation platforms, cassava was a 'one-person show': one individual produced, searched for markets, and even processed the tubers. But this optimized neither productivity nor incomes.

"When we joined the cassava value chain innovation platform, we reduced the multiplicity of tasks done by one person, in most cases, the producer. We now know one another through the innovation platform. We know the processors, the marketers and traders, the producers, the transporters, and so on. We know where to find each other and how to meet up – when and where. The labour, time and complexity requirements of cassava production and market access are minimized and we are now, in the words of Ms Muskuda Jalloh, an innovation platform actor in Sierra Leone, 'one family'."

– Lansana Sesay, Sierra Leone

settings, and networking and building and sustaining relationships based on trust and joint experience. This is in addition to the more explicit skills like facilitation – both an individual and an organizational capacity, which we discuss below.

Organizational level: new roles for national agricultural research institutes

In this section we focus on the national agricultural research institutes' capacity to innovate as they are the initiators of DONATA and the stakeholder group with which we have been working most closely. The innovation platform experience has had a seismic impact on the functioning of the research institute staff involved – and on their organizational capacity to innovate beyond the technology transfer approach. We have already seen above how the research institutes benefit from participation and would be keen to continue an innovation platform. Participation has made a lasting impression on the researchers as they explore different kinds of knowledge, and start to research in a different way. They began working differently – from purely on-station research in the past, to taking the preferences of farmers in the farmer-based organizations participating in the innovation platforms seriously into account (e.g., in **Sierra Leone**). In some cases, a paradigm shift has happened in terms of how the researchers work and how they see their role in the maize agricultural innovation system (e.g., in **Burkina Faso**). For example, the researchers are now decidedly more interested in farmer (user) perspectives and have created feedback loops in their technology development process to ensure that the technologies they develop are guided by farmer needs and interests. In addition, researchers are engaging in participatory experimentation – they are involving users (processors and producers) in the research cycle (see the section on incentives above).

All the national research institutes see a role for themselves after the end of DONATA in ongoing innovation platform activities, though less so in the facilitation and coordination. We see the research organizations returning to their main role: that of generating technologies and varieties to support cassava and maize sector development. In the previous section we talked about who

would take the lead where innovation platforms are continuing after the end of the DONATA initiative. Part of taking the lead entails having the **capacity to facilitate** future or existing innovation platforms. This requires a long list of skills that relate to different phases in the innovation platform life cycle (see Figure 6.1) (based on Tennyson 2005). The four phases demand different skills of a facilitator or broker: scoping and preparation, process management, learning and restructuring, and renegotiating (Nederlof & Pyburn 2012). When the research institute steps back, a concern is whether the capacity has been created in other organizations, or among a mix of organizations, to play these roles.

In **Sierra Leone**, the research institute will continue to interact with farmers to provide technical support and research services. This is also the case in Burkina Faso and Mali.

In **Burkina Faso**, the farmers' organization worked alongside the research institute to facilitate the local level platforms. The national extension office, part of the Ministry of Agriculture, will take the lead in future platform initiatives, so public extension will play a facilitating role in the production and marketing issues together with the farmers' organization. These are some of the partnerships that have developed and may ensure the sustainability of facilitation capacity.

In The Gambia, there is ministerial-level support for the broad categories of innovation platforms, a value chain approach and multi-stakeholder processes. The research institute will continue to act as the technical arm for the ministry on this, providing technical backstopping and technology injections. The national research institute is largely back to its original and key role, but now with a stronger link to other actors in the agricultural innovation system via the platforms. An extension and training centre has acted as platform facilitator from the start of the innovation platforms' activities; it has worked in the region in similar roles for a long time already. In this way, the capacity to facilitate is sustainable and well-embedded in a local organization other than the research institute.

Conclusions

Sustainability has not yet been widely addressed within DONATA. This is likely because the research institutes are still in the middle of the process of supporting the innovation platforms, even if the funds will soon dry up. We distinguish three categories of sustainability to consider vis-à-vis innovation platforms: sustainability of the **changes** that happen through the platform; sustainability of the **platform itself** as an entity; and sustainability of the **capacity to innovate** among the actors participating in the platform. Where sustainability has come on the radar, much more attention has been paid to the sustainability of the change (the uptake of a specific technology) and to the national-level institutional capacity to innovate, rather than to the sustainability of the innovation platforms themselves or the capacity to innovate at individual or organizational levels.

The first and most concrete question is whether to continue with a specific maize or cassava innovation platform. For DONATA, this is an urgent question. The initiative was using innovation platforms as a tool for technology dissemination. The platforms were not developed as an end in themselves; they were put in place to disseminate "on-the-shelf" technologies developed by the research institutes. Sustainability of the platforms was therefore not an issue as they were just a tool. So now what to do with the platforms that are in place, especially as many of them are just beginning to flourish? A likely no-cost extension will buy the platform facilitators and actors some time to consider this. We outline several aspects to consider when deciding whether to continue an innovation platform once its initial objectives have been met: sustained motivation (incentives), sustained resources (funds), sustained capacities (leadership and facilitation) and sustained relationships.

Incentives are important and vary from one actor group to another. Those who continue to engage in the platforms must have an incentive to do so. The incentives for research institutes are particularly insightful as they demonstrate a broader question, one also raised by key thinkers and practitioners in innovation systems: "how to connect and incentivize a complex system to innovate across the entire value chain with the end user in mind"? (Meridian Institute 2013:11). From the empirical evidence, we see that innovation platforms offer different incentives for different actors. Such incentives should act as fuel for continuation, either of the innovation platform itself, or of the capacity to innovate. These incentives provide motivation to engage, participate and learn collectively as the concrete benefits for different actor categories become visible and highly valued.

The second element – **sustained resources** – is always a challenge. The cases illustrate four means to generate resources to continue an innovation platform beyond project boundaries: internal participation fees, channelling income generated from platform activities back into the maintenance of the platform (contributions by the actors involved), funding representatives on an as-needed basis, and funding from external sources. These depend very much on what other projects and national policies are in place that the platform might tap into. Where there are no external resources, the actors are compelled to generate resources through the platform activities.

The issue of **leadership** of the platform after the end of a project varies across the cases. We see a mix of NGOs, government and research institutes taking the lead. For the most part, we see the research institutes going back to their main work after DONATA ends. After playing critical roles in starting up the maize and cassava innovation platforms, they are going back to what they do best – research.

Sustaining **relationships** and sustaining the **capacity to innovate** at individual and organizational levels was an implicit concern at best within DONATA. It was largely assumed among partners of the initiative that if someone participated in the platform, their capacity to innovate improved through the social cohesion and interaction generated (see Chapter 6 for more on stakeholder interaction). Bringing people together was seen as enough. It is fair to say that building capacity to innovate has been an indirect effect that can be summed up as "learning-by doing". Two divergent perspectives surface here. One is

that building the capacity to innovate is an **emergent property** of participation: when people come together in an innovation platform, innovation capacity is built up automatically - it just happens and is an unexpected outcome (hence the butterfly icon on the right). The other is that a non-systematic, implicit approach to building the capacity to innovate at the individual and organizational levels leaves capacity fragile and fragmented. It is not yet possible to draw conclusions on this. Is "implicit" good enough? If so, the implications are quite profound and a key point for exploration in the conclusions to the book (Chapter 11).

Organizational capacity to innovate is very linked to what is possible given the structural configurations within each country. When it comes to the research institutes' capacity to innovate, however, this appears to be quite sustainable. The research institute staff have internalized an ethic of researching differently. The capacity of the research institutes to innovate beyond just developing new technologies has been built up through the experience with the DONATA-supported innovation platforms. This capacity development is more than their merely gaining a broader conceptual understanding of innovation and its institutional and behavioural elements and links to the value chain and multi-stakeholder processes. The practical day-to-day research work of these institutes, and the value they now place on other actor's knowledge, have been built and have shifted markedly. This is an unexpected outcome of the process and was not an explicit intention. It is another example of an emergent property of the innovation platforms.

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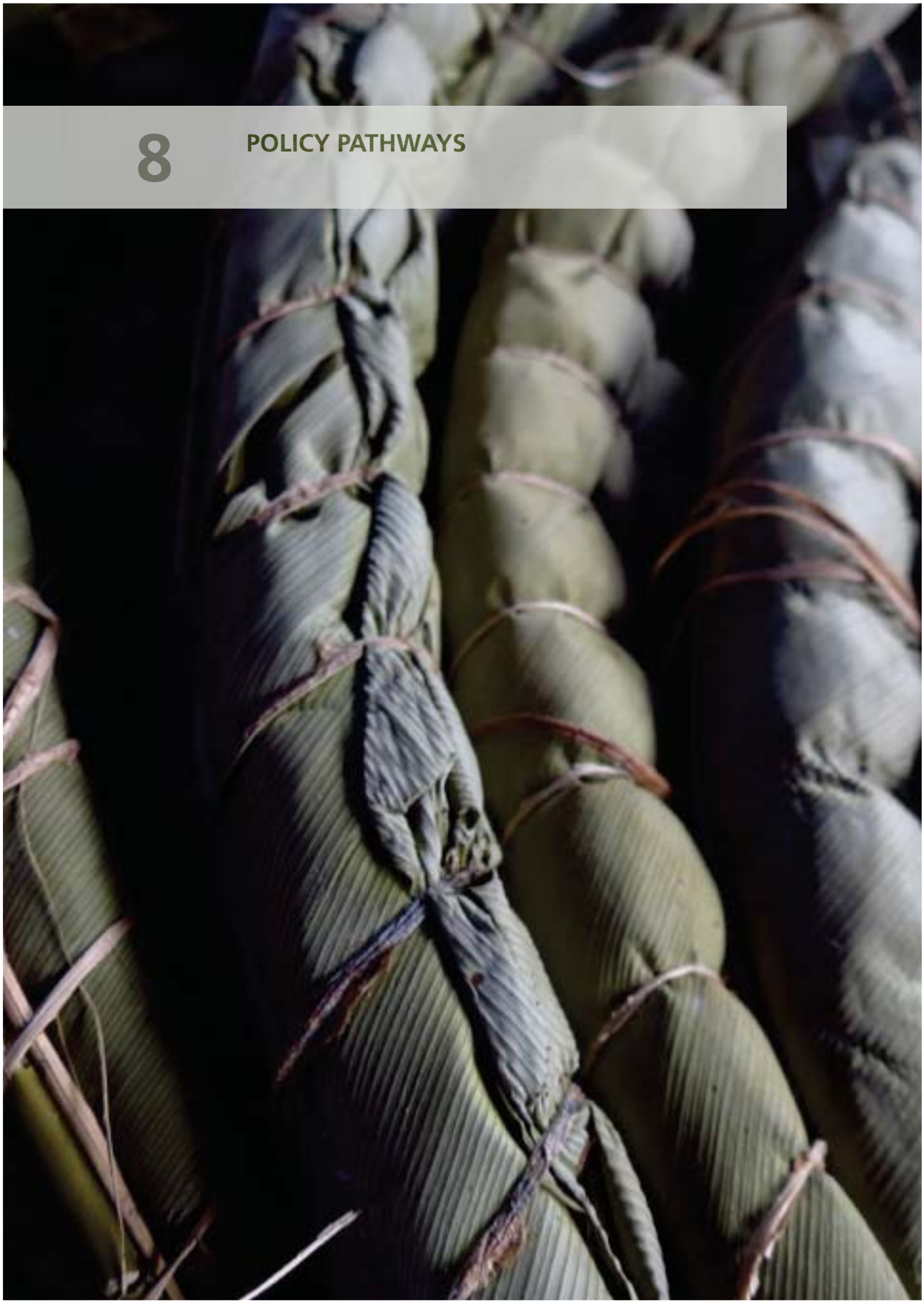
Part 3
Themes

8 POLICY PATHWAYS



Previous page: Bâtons de manioc – cooked cassava rolls.

Photo: Geneviève Audet-Bélanger

8 POLICY PATHWAYS

Rhiannon Pyburn and Sidi Sanyang

Empowering local communities to make changes in their lives and material circumstances is an important pathway out of poverty. But as Thompson et al. (2007:42) state, "…the manner in which local challenges can be addressed by and with the rural poor should take into account not only indigenous knowledge and practices, but also the dynamics and governance issues at higher scales, including the national, regional and global." A great challenge for innovation platforms is engaging with and linking to local and national government representatives and decision-makers. The relationship between policy and innovation platforms tends to be quite weak. This has consequences: "a lack of coherent policies and a predictable enabling policy environment are undermining stakeholder advancement" (Meridian Institute 2013:16). Yet, in order to effect long-term and lasting change, supportive policies and a stakeholder voice in informing policy, are critical.

This chapter looks at how local and national polices affect the activities, successes and challenges of innovation platforms. It also looks at how decision-makers can be engaged to support the processes at play within innovation platforms. The chapter draws from the cases presented in this book to explore the dynamic interplay between an innovation platform and policymakers at the national and local levels. It addresses question like these: How can innovation platforms engage policymakers? How do policies support the work of innovation platforms? What is the driver behind policy support when it happens? What hinders getting policy support? Drawing on examples from Sierra Leone, Burkina Faso and The Gambia, this chapter will look at these dynamics from two different angles: policy support or changes that affect the platform, and where innovation platforms effectively trigger or contribute to policy change.

The chapter begins by looking at **policy support to innovation platforms** and the forms that this may take: promoting the concept for technology adoption and sector development, or more broadly, changing policies that affect the issues addressed by the platform and the functioning of the value chain. The second section takes the innovation platform as a starting point and looks at how, why and when it is able to effect, trigger or contribute to policy change. It sketches out four **strategies used to affect policy change** by the innovation platforms and lead organizations referred to in this book. We close with some conclusions on creating and supporting policy pathways for innovation.

Policy support

Recognizing the importance of policy in the development and evolution of innovation platforms and in allowing room for success, we look at two levels of policy support in this part of the chapter. The first is policies that explicitly promote innovation platforms as mechanisms for technology adoption and sector development. This is a conceptual shift, in which policymakers accept, and indeed support, innovation platforms for agricultural development. The second level of policy support has a more implicit and indirect character: where policymakers set policies that regulate the value chain and have a positive influence on the activities of the innovation platform. These two elements will be explored in the paragraphs that follow.

Promoting innovation platforms

Innovation platforms are increasingly recognized as tools to inform advocacy for policy change. When policymakers saw the changes the innovation platform brought about in some poor communities of Burkina Faso, Sierra Leone and The Gambia, they started to mainstream the innovation platform concept into agricultural productivity programmes, including the World Bank-funded West Africa Agricultural Productivity Programme. This was indeed a strategy for sustainability in some DONATA countries: to ensure ongoing development of both the maize and cassava platforms related to the initiative, but also of the capacity to innovate in these sectors and at national level. We look at this in the second part of the chapter.

In **Burkina Faso** the innovation platforms were so successful in stimulating national-level changes that the mechanism is now integral to policy on research and technology dissemination. The Minister of Scientific Research and

Box 8.1 High-level endorsement in Burkina Faso

"If you are absent where decisions are made, you risk not having your voice heard. As former director of the national agricultural research institute, INERA, and professor at the university, and in my personal capacity, I was actively involved in a number of agricultural research-for-development initiatives including evaluation of competitive grants. I observed that while a number of technology and innovation dissemination and adoption approaches are used, widespread adoption and impact continue to elude us. We used extension approaches such as training and visit, and a number of participatory approaches, but we still needed to improve on these approaches and tools.

"The multi-stakeholder innovation platform, tested and validated through DONATA in maize value chain in Burkina Faso, was the key catalyst for policy engagement with innovation platform actors and hence the adoption of innovation platforms as a national policy. This is because innovation platforms bring about convergence, integration and synergy among diverse disciplines, skills and economic operators.

"I personally visited actors in the maize value chain in the province of Sissili and saw for myself the impact of technology and innovation on their livelihoods. For policymakers to be convinced and respond positively, we must see tangible outputs and outcomes that bring about change and impact in livelihoods whether in agriculture, health, water, housing, or rural development in general."

– Based on an interview with Prof. Gnisa Konate,
Minister of Scientific Research and Innovation, Burkina Faso

Innovation has taken up innovation platforms as **the** mechanism for technology development and dissemination at the national level. This is not only for agriculture, but also for other sectors. The ministries of agriculture and of scientific research and innovations decided jointly to establish innovation platforms for rice, maize, cowpea, shea butter, onions, and livestock and meat through the West Africa Agriculture Productivity Programme. The Minister of Scientific Research and Innovation, Professor Konaté Gnissa Isaïe, says that "the best system for technology development is to create political structures which are capable of accessing decisions centres, discuss issues and make themselves heard to access sufficient resources." For more on his perspective, see Box 8.1 and the film.

goo.gl/hkHsLE

However, despite the minister's glowing endorsement, not all the other ministries are supportive – or at least, they have different priorities. This is a hindrance for the maize innovation platforms in Burkina Faso.

In **Sierra Leone** we see a lot of policy interest generated. Box 8.2 describes how political interest there was stimulated. Innovation platforms are being taken up as a key mechanism for extension in the cassava sector and as a way to get into use the new technologies being developed by research. According to a senior ministry official:

> *It will now become policy for technology generation and dissemination. We will use the DONATA approach. That is the innovation platform. The good things we saw in the platform are that farmers participated and they were able to make some sound judgement for themselves, especially with the cassava varieties that were demonstrated by the platform. They were able to select the one for the particular commodity that they are promoting. For us here it is gari. Farmers were able among the varieties to select one, and in most of the communities around the DONATA operational areas you now*

Box 8.2 Innovation platforms becoming key extension tools in Sierra Leone

Policy influencers and policymakers at community and national levels were engaged to varying degrees in the cassava platforms in Sierra Leone. However, the key influence that the platforms exerted on policy was in the Ministry of Agriculture. Some ministry extension staff worked in loose collaboration with their counterparts at the Sierra Leone Agricultural Research Institute in the platform. The policy advisers at the ministry observed that the platform speeded the producers' adoption of improved cassava varieties. They saw that the platform brought all relevant stakeholders in the cassava value chain and food system together in a unique way when compared to other participatory approaches such as farmer field schools, participatory varietal selection, and demonstrations. They noted that while participatory approaches were useful, the platforms did something more: they consistently generated positive interaction and built relationships among the stakeholders in the value chain and food system.

In addition, the platforms had a strong market focus, which was missing in other participatory approaches. The policy advisors indicated the need to embed participatory approaches in the overall innovation platform process. Based on this, the Ministry of Agriculture adopted innovation platforms to disseminate agricultural technologies and "best bet" practices in cassava and rice through the West Africa Agricultural Productivity Programme. As Jack Jalloh, Assistant Director of Extension in charge of field operations at the Ministry of Agriculture, states:

"We will begin with farmers, extension, and research led innovation platforms in cassava variety and 'best bet' practice access by producers in 2012 and will include other critical actors as we evolve despite weak capacity in innovation platform processes in our country. A bill for the use of innovation platforms as key extension tool is drafted and will be put before Parliament in the near future."

find a lot of the material, and they even give it local name. Some are called "blue boot", meaning that it is a saving variety: it actually reduced some of the constraints.

– Jackasiano Jalloh, Assistant director of extension, field operations at the Ministry of Agriculture, Forestry and Food Security

goo.gl/wcXr6C

A full explanation of Mr Jalloh's perspective can be viewed in the film.

In Sierra Leone, a further development is that the Ministry of Agriculture is working closely with the International Fund for Agricultural Development (IFAD) in establishing rural financial institutions to support farmer groups to access bank loans. Innovation platforms help the actors to get loans: being organized is a prerequisite for a loan approval. It was not the innovation platform itself that was registered as a group, but rather sub-groups of actors who were a part of the platform. Access to funds through this scheme has supported the activities of some actor groups in the platforms.

In **The Gambia**, the involvement of district and regional leaders ensured that the policymakers were aware of what was happening within the innovation platforms: they participated and could see it for themselves. Like in Burkina Faso and Sierra Leone, the Gambian platforms are also being linked to the West Africa Agricultural Productivity Programme as a way to sustain and continue the promotion of the innovation platform concept in other sectors, as well as the maize platforms specifically (see Box 8.3).

See Chapter 7 for more examples of the link to the West Africa Agricultural Productivity Programme and how the innovation platforms and innovation capacity were connected to such regional programmes to ensure their sustainability.

The uptake of the innovation platform concept beyond the cassava and maize sectors is an **emergent property** of the platforms and DONATA as a whole. The intention was to improve technology dissemination for cassava and maize, but much has happened beyond what was foreseen or planned for. The concept is taking off as a result of the synergies on the platforms themselves and the inclusion of policymakers as platform actors.

Policies to support sector development

Policies can create incentives for innovation. For example, technical regulations and standards for food safety and plant health as well as quality standards can spur farmers to adopt good agricultural practices (Meridian Institute 2013:17). Policies can also open up new markets or increase demand in a particular sector. For example, in **Sierra Leone** an innovation platform is lobbying the Ministry of Trade to permit bread to contain up to 5% cassava flour. If this is approved, then the demand for cassava from processors and producers will rise significantly.

Another example from Sierra Leone is the revoking of existing bylaws that guide relations between cattle raisers and crop farmers. In recent years the

Box 8.3 Political leaders' involvement and links to regional programmes and other sectors in The Gambia

Both the district chief and the regional governor indicated that the policy dialogue within the platform brought about a sense of community, motivation, and pride among the people involved. Now a constitution is in place, emerging from that process, to guide the collective decision-making process on maize as additional livelihood option for the rural economy. The achievements of the maize innovation platform in the North Bank region of the Gambia led to the National Agricultural Research Institute and the Department of Agriculture (Extension) to adopt innovation platforms in maize, rice and groundnut in The Gambia through the West Africa Agricultural Productivity Programme.

cattle raisers had allowed their animals to roam freely over what were meant to be crop-growing areas. This damaged the cassava fields, as the animals ate the cassava stems and sometimes even the tubers. The higher yields resulting from the new varieties used by the platform piqued the interest of the local authorities: cassava helped get people through the "hunger period". When people began to see how the innovation platform activities were supporting local food security, the local chiefs were prompted, on the advice and input of the farmer-based organization actors, to insist that existing bylaws were followed. To maintain the cassava supply, the chiefs resurrected a forgotten rule. The matter was solved in a traditional manner, using a legal mechanism. It was not a new policy, but the revival of an existing one (Box 8.4)

In **Cameroon**, the farmer-based organizations arranged for improved varieties from the research institute and the Ministry of Agriculture and Rural Development to be distributed to farmers so that they could supply the processing industry. This new industry is being developed; it currently does not have enough raw materials to function full-time – something which was not fully considered when the processing industry was planned. One leader sums up the situation:

A concrete result is the recently signed partnership agreement between the Institute for Agricultural Research for Development and the Ministry of Agriculture and Rural Development on research. Without seed [cuttings] for farmers – improved seed [cuttings from improved varieties] that will give higher yields and meet the factory's needs – the factory would not be possible [authors' additions].

goo.gl/kPJAFb

– Marie Joseph Medsem Engama, executive secretary of the national consultation framework of the farmer-based organizations of Cameroon

Policies can also work contrary to the goals or aspirations of an innovation platform. We saw this in Sierra Leone when massive exports of *gari* to Liberia and Guinea did not follow the correct channels. This led to a shortage of *gari* in Sierra Leone. The Ministry of Trade temporarily banned the export of *gari*. While this ban addressed the national food security issue and was appreciated by local consumers, it prevented the producers and other platform actors from earning more as export prices were higher than local prices. Luckily, after a

Box 8.4 Reviving traditional mechanisms for policy support

There is a farmer-based group known as "Gbendembu Agricultural Project" based in Fore-road in Loko. This group is a member of the Pate Bana innovation platform in Sierra Leone and they planted a hectare of improved cassava in 2011. Seven months later, cattle got into the fields, ate the leaves and tubers, devastating the valuable crop. The group chairman, Desmond Bangura, took the matter to the Gbendembu Ngowahun chiefdom. A team of chiefs went to assess the damage. The chiefdom fined the owner $200 under a bylaw requiring compensation and rehabilitation of land damaged by cattle, and instructed him to repair the fence around the fields.

Resolving conflicts in this way builds the platform actors' confidence for sustainable cassava production.

– Lansana Sesay, Sierra Leone

few months, the law was lifted without the innovation platform having to do any lobbying.

Platforms effecting policy change

"In the messy and power-infused world of policymaking, innovation platforms can help balance the vested interests of market actors, civil society and other stakeholders to support policy processes" (Cadilhon et al. 2013). The potential is immense for innovation platforms to act as a countervailing force providing smallholder farmers with more voice in policy decisions that affect their lives. The question is, how to do this. How can innovation platforms influence policy and contribute to changes in policy, which will improve the functioning of the value chain, and ultimately, improve the lives and livelihoods of value chain actors involved?

The innovation platforms initiated through DONATA have influenced policy in several ways. This was largely seen as a way to ensure the sustainability of the platforms and the capacity to innovate at the national level (see Chapter 7 for more on capacity to innovate). We distinguish four discrete strategies for institutionalizing the capacity to innovate at national level, drawing especially from the cases of Burkina Faso and The Gambia:

- Involving policymakers as actors in the platforms
- Profiling the innovation platform's success (e.g., using mass media)
- Creating dedicated policy platforms
- Linking up to other projects and programmes.

Involving policymakers as actors in the platforms Local policymakers (traditional chiefs, local authority leaders) are key actors in many of the platforms. Their presence provides weight and legitimacy to the platform, and they often formally chair platform meetings. By taking part in discussions, they learn about issues of importance to the platform actors. They can help resolve these issues either by helping the platform actors reach agreement, or by wielding their moral and official authority outside the platform. In Sierra Leone, this has been successful because local councillors want to be associated with things

Box 8.5 Political influence in the Gambian maize innovation platform

Local authorities that are also innovation platform actors, such as the district chiefs, national assembly, ward councillors, and village heads, know the problems that the people participating in the platform face and can use their offices to facilitate and influence policy decisions. Examples include:

- The **Governor of the North Bank Region** ensures the transporter and cereal grain traders have smooth passage by asking security checkpoints to allow free movement of their products to the weekly markets in the region.
- **Transporters** of livestock to the markets complained of difficulties they encounter at the checkpoints, even though they had the correct permits. The security chiefs who attended during this livestock innovation platform convergence told the transporters that they should report such cases to the nearest police station.
- The **Regional Director of Education** in the North Bank Region invited the innovation platform committee to join the school feeding programme's technical committee. This was to facilitate the supply of grain from farmers to the feeding programme.

Including these influential public figures in the innovation platform adds to its bargaining power and reach. The authorities are keen to participate because they see that maize provides a way to improve people's incomes.

– Ansumana Jarju, DONATA focal point, The Gambia,

that are working – and the innovation platforms are indeed working well. The involvement of officials in the innovation platform is thus mutually beneficial.

In **The Gambia** we see examples of engagement of policymakers at the local and regional levels as well as the chief at the district level. But the Gambian innovation platforms also invite the regional governor's office to meetings and field days so that he can see the platforms' major technical achievements with his own eyes. This approach embraces multiple entry points for policy influence (Box 8.5).

The engagement of policymakers in the maize value chain and food system through the innovation platform was strongest at the community level. Community decision makers such as village heads and religious leaders were involved in the platform as were district chiefs, and the Governor of the North Bank Region. The community decision-makers as well as the regional and district leaders held much sway when it came to framing decisions and in shifting norms and values to promote maize for food security and as a supplement to the main staple food – rice.

The highest level involvement has when the President of The Gambia heard about the innovation platforms on his annual "meet the people" tour. He is constitutionally obliged once a year to hear what is happening with the people in the country and bring that to bear on formal governmental policies. During a recent tour, he learned about the maize innovation platforms. He has told the governors of other regions to emulate what the North Bank is doing. While this is not a formal or written requirement, the President's words are considered policy. Such recognition is a major coup for the concept and expansion of innovation platforms in The Gambia.

In **Burkina Faso**, an important factor for sustainability linked to policy has been the involvement of the regional governor in the local innovation plat-

Box 8.6 Presence brings credibility in Burkina Faso

The regional governor regularly attends platform meetings. His presence lends authority to the platform. He represents a moral obligation for other stakeholder to attend beyond merely for their own economic and social interests. More than his capacity as representative of the state, his presence builds trust among the people participating in the platform so that differences of opinion are more easily resolved. His presence dilutes angry debate and inspires platform actors to respect one another in a peaceful climate: he acts as a regulator of interactions among the actors. His presence also enhances the credibility and visibility of the platform at the provincial and national levels. The governor also participates in field visits to farmers' fields – a source of pride and encouragement to producers. Farmers work in a spirit of healthy competition in the hope of hosting him when he next makes such a visit.

– Taonda Sibiri, DONATA focal point, Burkina Faso

forms. His regular involvement cemented the commitment and functioning of the innovation platform, as actors were more likely to attend and to conduct themselves appropriately in his presence. His participation acted as an additional incentive, and allowed issues to be taken up at the *cadre de concertation* (consultation body) beyond the local platform, thus stimulating policy change. His participation has thus been critical for political reach and in regulating the internal functioning of the innovation platform (Box 8.6).

Profiling the innovation platform's success Another strategy is to make the policymakers aware of the platforms' successes as they happen. Many platforms have representatives from the media: a community radio station (often run by a non-government organization), a local or national newspaper, or a television station. These reporters participate in meetings and other activities, shoot video, interview platform actors and farmers, and write news stories or produce programmes for broadcast. These stories and programmes raise awareness about the platforms and their activities among farmers, other rural people, and local and national policymakers.

The **Gambian** innovation platforms use many forms of media to reach a broad audience and share their successes and achievements. By inviting policymakers at different levels to the field days, they have the added benefit of the policy people speaking to the media about their impressions of the innovation platform's success.

Box 8.7 Spill-over effect of the innovation platform concept in The Gambia

One of the key products of the innovation platform process in The Gambia was the emergence of a maize growers' association at the community level involving diverse social and economic actors. This association has gained recognition at the community and regional levels, and its profile in The Gambia as a whole has risen. Similarly, its engagement with policymakers has increased significantly, especially at regional level. Recently it has made significant progress in engaging higher-level government policymakers such as the ministries of agriculture and education; the latter playing a major role in the purchase of locally produced food, including grain, for the school feeding programme. The high profile of the association led to the emergence of new maize growers' associations in five districts. Although these new farmer-based associations are not yet organized into multi-stakeholder innovation platforms, they offer opportunities for the creation of such platforms in these new districts.

Widespread communication of the innovation platforms' activities is a sustainability strategy that we refer to as a "spill-over effect". Other initiatives in the region start to imitate their success through what they see or hear about via media or local leaders (Box 8.7).

The story in Box 8.7 underlines the development relevance and effectiveness of the innovation platform in The Gambia, despite its recentness. Excitement over the success of the innovation platforms within DONATA led it to spill over to other groups, which began playing with the innovation platform concept and remoulding it to fit their own purposes. This spill-over is partly the outcome of generating interest among policymakers. The result has been the phenomenon of other groups in the area coming up with their own mechanisms for stakeholder interaction, based on their understanding and observations of DONATA innovation platforms. Such spill-over is an **emergent property** of the innovation platform: an unexpected, indirect, but welcome outcome.

Creating dedicated policy platforms This third sustainability strategy linked to policy is best demonstrated in **The Gambia**, where a special innovation platform has been established at the regional level to discuss policy issues in maize (Box 8.8). This policy dialogue platform allowed policymakers to recognize the relevance of innovation platforms for agricultural development and to put policies in place to secure future activities and potential.

Another example of supportive policies is where subsidized fertilizer and pesticides for maize and reduced tax on products sold by the innovation platform were put in place. This shift in maize policy came out of the regional level policy platform in interaction with national and regional policymakers. The policy platform in The Gambia is very much linked to access to inputs and bulking. It targets very specific policies.

In **Burkina Faso** there are no dedicated policy platforms, but the provincial marketing and processing platforms involve policymakers and explicitly address policy issues. These platforms bring together policymakers such as ministry officials and heads of departments to discuss and decide on issues identified through the local platforms.

Linking to other projects and programmes In **Burkina Faso**, the research institute and innovation platforms have been successful in generating political

Box 8.8 Maize policy platform in The Gambia

The establishment of a regional policy dialogue platform was important in The Gambia. To get this to happen, a full-day consultative meeting was held in Kerewan, attended by all seven district chiefs in the North Bank Region, the area council, the elected women councillors, ward councillors, national assembly and the office of the governor. A forum was created where each arm of authority could clearly see its responsibility for the sustainability of innovation platforms in the region and beyond. This was in reference to the start of the West Africa Agricultural Productivity Programme and the intention to strengthen the work of DONATA. During this convergence, all district chiefs paid their participation fees and advocated for the innovation platform to be given full support through their offices. The central government's support is evident from the interest of the highest authorities in DONATA's approaches to food and nutrition security in The Gambia.

– Ansumana Jarju, DONATA focal point, The Gambia

Box 8.9 Burkina Faso, the West Africa Agricultural Productivity Programme, and sustainability

The successes associated with the DONATA innovation platforms convinced the Bukinabe government: an innovation platform approach was incorporated into policy to use a multi-stakeholder platforms for six products, including sunflower, sesame and fonio. Platforms will be put in place for shea, cowpea, rice and livestock under the West Africa Agricultural Productivity Programme framework.

– Taonda Sibiri, DONATA focal point, Burkina Faso

interest and policy support for the innovation platform concept and their use as a viable tool for technology dissemination and agricultural development. Innovation platforms are being institutionalized in the country: they will be integrated into all new projects. This has become policy, and will be used as a mechanism in, for example, the West Africa Agricultural Productivity Programme (Box 8.9).

Other DONATA platforms are also collaborating with the West Africa Agricultural Productivity Programme and using it as a vehicle for sustainability. Box 8.10 describes the approach used in **The Gambia**.

In **Sierra Leone**, the West Africa Agricultural Productivity Programme and national government policy also play a role in sustainability. The government's policy on food security, through a smallholder commercialization project, has used the innovation platform approach and takes the DONATA platforms into a wider value chain development programme, funded by the West Africa Agricultural Productivity Programme. The same is true in Burkina Faso.

But while innovation platforms as a concept are taken up politically in Burkina Faso, Taonda Sibiri, the DONATA focal point for the country, both celebrates this success as well as cautions against overdoing it: "go slow, don't put too much pressure as the capacities are not yet fully in place." He is referring to capacities in the national agricultural research institute and among extension workers and development agents. These capacities include their understanding of the innovation platform concept, as well as their facilitation

Box 8.10 Linking to African regional policy initiatives

As result of their sound footing and performance over the years, one of the innovation platforms in The Gambia sold 23 tons of yellow maize grain (JEKA and DMR varieties) to the farmers involved in the innovation platforms of the West Africa Agricultural Productivity Programme in all six agricultural regions of the country. Linking the DONATA innovation platforms to this broader framework programme secured their sustainability because it distributed the seed from the platforms country-wide.

The West Africa Agricultural Productivity Programme recognized that farmers were assured of ready markets through the DONATA innovation platforms. The platforms linked them to potential buyers in the region and beyond through weekly markets and personal communications, and helped them become more responsive to new technologies and approaches. The platforms also stimulated farmers to get better organized, network more strongly, and speak with one voice.

– Ansumana Jarju, DONATA focal point, The Gambia

abilities. Harmonization across the many new platforms and finding qualified people to manage them are challenges.

Conclusions

Policy is a hot topic, especially among national organizations (like the national agricultural research institutes), and international organizations, whether based in Africa (like CORAF/WECARD) or working to support agricultural development in Africa (like KIT). This chapter looked at the dynamics of policy relationships with innovation platforms from two vantage points: how policy affects innovation platforms; and, how innovation platforms can inform policy. **Supportive policy** comes in two distinct forms: policies that promote innovation platforms as an approach to agricultural development, and policies that support platform activities. Both were discussed in the chapter.

The cases used in this chapter illustrate where policy support has been generated and the processes by which this happened. In **Burkina Faso**, **The Gambia** and **Sierra Leone**, we start to see a conceptual shift in which policymakers accept, and indeed support, innovation platforms, and set policies that regulate the value chain and have a positive influence on the platforms' activities. Policy support is visible in the countries with innovation platforms at higher levels (provincial, regional), such as The Gambia and Burkina Faso. In Sierra Leone, the regional coordination committees play an important role in engaging policymakers. In **Mali** and the **Republic of Congo**, where platforms remained at the local level, policy support is less.

Policies that promote the innovation platform concept The concept is taking off as a result of the synergies on the platforms, the inclusion of policymakers, and their being made aware of the successes. Where innovation platforms are embraced as an agricultural development strategy, policymakers are setting up structures which are capable of accessing the centres of decision-making in the country or region, discussing issues and making themselves heard in order to obtain resources.

Polices to support innovation platforms' activities Policymakers can set policies that regulate the value chain and have a positive influence on the activities of the innovation platforms. These policies can create incentives for innovation as well as opening up new markets or increasing demand in a particular sector. They can also work contrary to the goals or aspirations of an innovation platform, as we saw in the Sierra Leone example of *gari* exports.

This brings us to the implementation question. How can innovation platforms make a difference in policy, either at the level of promoting the concept, or the more concrete changes to sector regulation? This last part of the chapter links directly to the sustainability discussions in Chapter 7. It gets to the heart of how the capacity to innovate can be sustained at a national level.

Innovation platforms effecting policy change This chapter described four strategies that the national agricultural research institutes used for innovation platforms to effect policy change: involving policymakers as actors in the platforms, profiling the innovation platforms' success, creating dedicated

policy platforms, and linking to other projects and programmes. We saw that the presence of policy leaders in an innovation platform provides weight and legitimacy to the platform as they learn about issues of importance to the platform actors. These leaders can help resolve the blockages for good functioning of the sector either by helping the platform actors reach agreement, or by wielding their moral and official authority outside the platform. Using the media and profiling success stories raise awareness of the activities among farmers, other rural people, and local and national policymakers.

These strategies demonstrate that sustainability linked to policy can be sought out both directly (e.g., through a specific policy platform, by lobbying policymakers, or by engaging policymakers in the platform), and indirectly (e.g., by setting a good example and profiling the platform's success, or by linking to other programmes). Some countries use a mix of these strategies. By engaging policymakers to create conducive policy, the national institutional capacity to innovate is thus fostered. The potential is immense for innovation platforms to act as a countervailing force by providing smallholder farmers with more voice in policy decisions that affect their lives.

For all four strategies, the presence of a range of stakeholders (and hence a range of views) on the platforms is vital. The platforms are not a place for lobbying by an individual interest group (such as farmers), but for co-learning amongst representatives of the value chain as a whole. The multi-stakeholder element of innovation platforms is critical for successfully influencing policy as it represents a shift away from single interest groups to sector-wide reflection on changes required for mutual interests.

The DONATA initiative (e.g., in Burkina Faso, The Gambia and Sierra Leone) managed to get innovation platforms on a national agenda; now the research institutes are able to step back and reap the benefits. They are doing this without making strong claims or holding on to their initial roles as facilitators or initiators. The question then becomes whether there is sufficient capacity to support large-scale uptake of innovation platforms across the board in agriculture to promote innovation. In Burkina Faso, we heard concerns about capacity gaps: more people who can support innovation platform development are desperately needed. Training and experience are necessary but lacking. Will agricultural development blossom with policy support for innovation platforms, or will countries end up with lots of innovation platforms, burnout of the "experts" and a decline in stakeholders' interest – and indeed in the innovativeness – of working with innovation platforms? The risk is that innovation platforms become a new trend that is advocated universally to address all challenges and opportunities in the agricultural (or other) sector.[1] A challenge will be to distil when and under what conditions an innovation platform is the most useful tool. ILRI also make this observation, underlining the importance of defining the right conditions or entry points for this type of intervention (Boogard et al. 2013). Innovation platforms are not, after all, a panacea or cure-all.

1 CORAF/WECARD and countries implementing the West Africa Agriculture Productivity Programme through the World Bank are dealing with this by contracting a consortium of service providers for the holistic competence and skills enhancement of innovation platforms facilitators, practitioners, including the broader innovation platform actors. The aim is to build a supportive community of practice and shift through learning workshops, peer learning visits, writeshops and so on.

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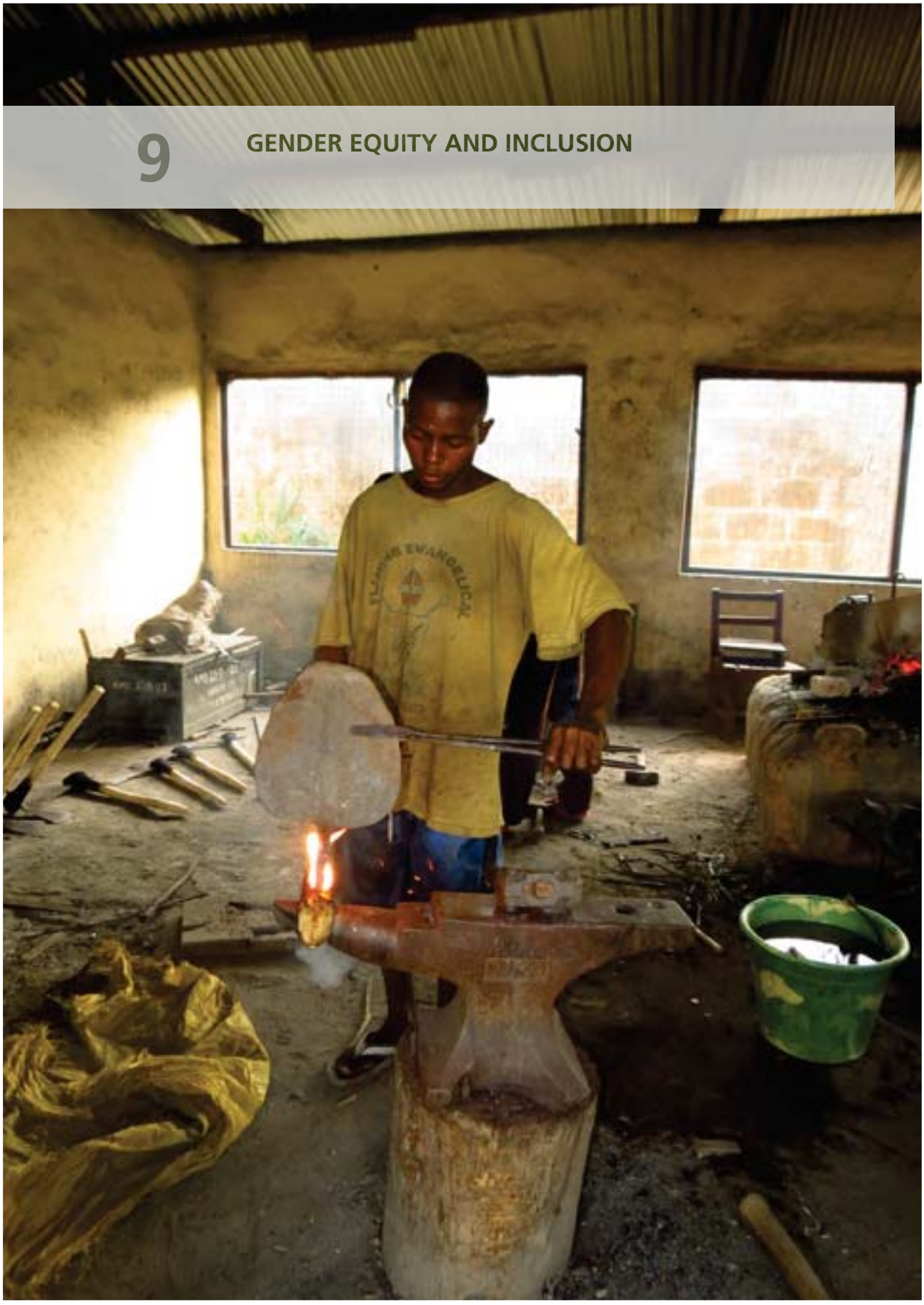
9 GENDER EQUITY AND INCLUSION



Previous page: A polio survivor working as a blacksmith in the Makeni Innovation Platform, Sierra Leone.

Photo: Geneviève Audet-Bélanger

9 GENDER EQUITY AND INCLUSION

Rhiannon Pyburn

In the introduction to this book (Chapter 1) we frame cassava and maize innovation platforms as a food security endeavour. A recent paper by Beuchelt and Badshue, based at the International Maize and Wheat Improvement Center, takes as a starting point that the promising solutions for addressing food insecurity as well as climate change and natural resource scarcity, are heavily technologically biased, without sufficient attention given to gender and social disparities (2013:709). This is a significant oversight, especially as women are widely recognized as the "guardians of household food security" (Meinzen-Dick et al. 2011). Engendering innovation systems may involve a shift from thinking about agriculture, to thinking about food (processing, cooking, nutritional value) (ibid.:32).

Despite its focus on food security crops, gender equity and inclusion were not taken up with rigour within DONATA. The initiative is hardly alone in this omission, as gender issues tend to be overlooked and neglected almost universally in agricultural innovation systems thinking and practice, despite roots in participatory approaches. Inclusion is generally limited to smallholder farmers without much attention to the diversity of sub-categories within that 'farmer' label. The take-home message of this chapter is that it is imperative to get gender equity and inclusion on the agenda of national agricultural research institutes in West and Central Africa in order to build more resilient agricultural innovation systems.

We take the opportunity of this book to learn from the lacuna of gender equity and inclusion in agricultural innovation systems discourse and practice

Photo: Geneviève Audet-Bélanger

Wife and children of innovation platform actor and very successful maize farmer Azize Nignan in Burkina Faso, with maize for processing for home consumption.

and begin to contribute to a much-needed and timely paradigm shift. To feed and nourish this shift, the chapter draws on a limited but growing body of literature on the topic. It draws only lightly from the empirical experience of DONATA apart from the notable exception of an interesting and revealing story of the inclusion of vulnerable groups coming from a Sierra Leonean innovation platform, which provides inspiration for others in the region. The chapter offers a framework for addressing inclusion more broadly and effectively within agricultural innovation systems – food systems – and specifically, the innovation platforms embedded in them.

To engender agricultural innovation systems analysis means emphasizing the institutions and actors that create "gendered" patterns of interaction (Kingiri 2010:29). This requires analysis through the chain and beyond it to include support services and contextual issues and social institutions like customs, laws, educational opportunities and market access . This can be done in part through addressing gender concerns in research and extension, but there are other levels to consider also. Engendering agricultural innovation systems demands an exploration of different components of the system and the gender dynamics at play in each: we do this throughout the sub-sections of this chapter.

Key areas for addressing gender implications in innovation platforms relate to the broader agricultural innovation systems, and can be linked to value chain components presented in Chapter 2 (see Figure 2.1), namely:

- **Context** Policy, education, customs, behaviours, etc.
- **Chain actors** Farmers, processors, marketers and so on
- **Chain supporters** Service providers, namely research, extension services and development organizations.

In this chapter we reflect on how each level can be engendered. We then turn to the specific piece of the agricultural innovation system that this book is about: innovation platforms. We look at **inclusion in innovation platforms,** how one platform in Sierra Leone deals creatively with the issue, and the **benefits of inclusion** for both the innovation platform and the individuals involved. We close with some reflections and conclusions on gender equity and inclusion in agricultural innovation systems, innovation platforms in particular.

Engendering agricultural innovation systems

Agricultural innovation systems are complex and characterized by technological, organisational and institutional change. Gender is defined as: "a determining factor in defining who does what, who has what, who decides and who has power" (UNICEF 2011). It is a social construct that is context-dependent and is not based on sex. Gender specialists and experts on agricultural innovation do not typically understand each other very well (Kingiri 2010:33). That said, recent publications are beginning to work on cracking the nut of gender equity in agricultural innovation systems by bringing an innovation systems framework together with gender analysis and making explicit what is implicit in both.

Gender analysis is a tool to look at a society and ensure that interests of men, women and children from different social categories are addressed (Meinzen-Dick et al. 2011). A gender framework allows us not only to look at women and men and their relative positions in the agricultural innovation system, but also at the inclusion of marginalized or vulnerable groups. For example, the rural "brain drain" from rural communities which speaks to the high average age (60 years) of farmers and the fact that young people are leaving rural communities in search of a different lifestyle (Meridian Institute 2013:3). The exodus of young and talented people is raising serious concerns as to the future of food production (ibid.). The challenge of creating meaningful opportunities for youth in rural communities is becoming a crisis in developing countries. This is one category of people needing inclusion.

We start to link a gender analysis to agricultural innovation systems analysis, with learning and systemic change as common ground starting points. UNCTAD identified three areas as entry points for applying a gender lens to science, technology and innovation: science for women, women in science, and women in innovation systems at national and grassroots levels (UNCTAD 2011:ix).

Science for women means access to technological advances (e.g., through extension services), and that technologies are developed with women specifically in mind: with women farmers' needs as the driver. There are some compelling examples of how technological developments in agriculture can have very different impacts on the lives and experience of different household members (women, men, girls and boys) (c.f. Beuchelt & Badshue 2013). This first entry point is discussed in the section below on "research and extension – chain supporters".

The second entry point – **women in science** – is about addressing the gender imbalance in science and technology education, which favours boys and men in three out of four countries worldwide. This involves promoting women as role models in science and technology as well as providing conditions that are amenable and supportive to women (ibid.). This entry point is discussed in the section on "context".

However, the third category is most important for the level that this book is addressing – **women in innovation**. This entry point is about encouraging and supporting the role of women in innovation systems at national and grassroots levels. Women need access to capital, markets and education to be able to improve their livelihoods. It involves advisory services for women, training, financing, as well technologies to support improved quality and quantity of production. Women in innovation also means looking at women vis-à-vis senior management positions within farmer groups, in extension services and in research organisations (UNCTAD 2011:x). It means looking at women's roles in formal research–development–extension systems, but also at their roles as farmers and processors and as innovators (Meinzen-Dick et al. 2011:50). This entry point comes out in "chain actors – who does what" as well as in the "inclusive innovation platforms" section.

Empowerment of the agricultural innovation system "Women in innovation" is cross-cutting and systemic in nature. It demands from gender experts, a shift from gender analysis to gender learning and understanding the insti-

tutional environment (Kingiri 2010, 2013). Kingiri links this to strengthening innovation capacity of the people in the agricultural innovation system (ibid.).[1] Valuing the knowledge of the many actors involved weaves easily into an agricultural innovation systems perspective, which focuses on multiple actors, different kinds of knowledge, and "distributed cognition" (Hutchins 1995). It is the interaction between holders of different kinds of knowledge that is key to innovation. Kingiri calls for the "empowerment of the system", not just the empowerment of women (Jafry & Sulaiman V 2013a:435, Kingiri 2013).

Women's roles as innovators in agriculture are less acknowledged, less visible and less recognized than men's. However, often women-led innovations are institutional in nature, for example, new organizational processes or approaches to the management of agricultural and natural resources contributing to greater resilience at the community level (UNCTAD 2011:17). This means that exclusion or overlooking women's contributions or women-led innovation harms not only the individual women themselves, but also the system.

Gender analysis and innovation systems thinking have a focus on learning and systemic change in common. As the UNCTAD observation suggests, inclusion may broaden innovation beyond the limits of technological change to embrace organizational and institutional change also. These are the new frontiers for agricultural innovation systems.

Context: Policy, education, culture

Gender analysis and an innovation systems approach have in common that context matters and institutional and systemic change are part and parcel of the game. Context-specific and actor-specific perspectives are essential (Meridian Institute 2013) for both an innovation systems perspective and for a gender and rights approach. In Chapter 8 we looked at policy and institutional capacity to innovate. Understanding and strengthening innovation capacity is a window through which gender equity and inclusion can be addressed (Kingiri 2013). Strengthening the capacity to innovate of all actors opens up more opportunities for the system as a whole.

Structural elements of agricultural innovation systems can constrain or enable innovation. Structure is a very important concept when we come to addressing gender and inclusion in agricultural innovation systems: what institutions are in place that create opportunities for inclusion, or constrain people's inclusion? Examples of contextual (**structural**) aspects of an agricultural innovation system are the policies and laws in place, the education system and access to it, and cultural norms or societal expectations. These are echoed by Murenzi et al. (2010) as the preconditions for women's participation in innovation systems – access to education, capital and markets (UNCTAD 2011:16). The preconditions are at the same time the key constraints if not in place.

Supportive policy When it comes to agricultural innovation systems, it is a recognized challenge for governments to engage women better (UNCTAD 2011:17). Yet, involving women in science and technology allows them to have

1 See Chapter 7 and Chapter 8 on capacity to innovate

Box 9.1 The impact of national-level advocacy to promote women's equality

In Sierra Leone, it is felt that in almost all innovation platforms, men and women have equal say and opportunities in all activities undertaken by the group. Men and women work alongside in clearing the land, planting, and harvesting tubers and leaves. Women are mainly involved in marketing, so determine when tubers and leaves are to be harvested.

The drive by the 50/50 Advocacy Women's Group, a women's network movement for gender equity, has served as an impetus for the participation of women in all sectors of development in Sierra Leone. The innovation platforms have not been an exception to this. The active involvement of both men and women in innovation platforms has contributed immensely to the platforms' successes.

– Lansana Sesay, Sierra Leone

more influence over the research and development agendas within research institutes and the private sector (UNCTAD 2011:13). Why is it that building on women's knowledge and experience and building their innovative capabilities are so difficult? Supporting women and men to develop and use science and technology for sustainable development and to support women's leadership and participation in the science and technology sector (UNCTAD 2011:17) is a challenge to be taken up.

Institutional support through policies can have a significant impact triggering many levels of change. For example, Sierra Leone has the first blind government minister in West Africa: Mustapha Bai Atila,[1] Deputy Minister of Social Welfare Gender and Children's Affairs. In this sense a spirit of inclusion is "trickling down". There is a 50/50 women advocacy group (see Box 9.1) that engages the government to promote 30% women as government representatives, and Sierra Leone has achieved close to that quota. Inclusion is important in all sectors, including at the Cabinet level. Women are seen in key ministerial positions.

The impact of role models, advocacy and societal shifts in expectations or norms cannot be underestimated. The presence of a blind man as a government minister has challenged commonly held perceptions as to the limits and capacities of the blind, opening the door to inclusion. The same can be said for the impact of the 50/50 advocacy group when it comes to gender equity in Sierra Leone. New incentives are set, and doors can open.

Education and age: More complex than assumed It is well documented that women are disadvantaged when it comes to access to agricultural extension services (Meinzen-Dick et al. 2011:6). This is very often linked to education (ibid.). Poor farmers, especially females, are often disadvantaged when it comes to education and are thus overlooked or not targeted by extension workers (Beuchelt & Badstue 2013:714). Interestingly, however, an in-depth study of gender differences in access to services in Ethiopia found that education and age, for that matter, while significant in terms of the male head of household's access to services, did not significantly influence female heads of households'

1 http://tinyurl.com/o38cd5r

access (Ragasa et al. 2013:453). Education level did make a difference, however, in terms of women visiting demonstration plots (ibid.).

A significant factor in female household heads' access to services was, however, the number of men in the household (ibid.). This example brings out contextual factors beyond education. It addresses the assumption that is widely held that education is the major factor limiting women's participation in famer-based organizations, training, or other kinds of organizations. It suggests that other structural issues like land size and the number of men in a household (which made a difference as to the women's access to services) had greater impact on technology adoption.

Constraints to technology adoption When other factors are controlled for, Ragasa et al. (2013:454) found that in Ethiopia, it was not the sex of the person per se that dictated differences in technology adoption, but something more indirect: **gender-differentiated land size** and access to extension explained these differences between men and women farmers. Gender-differentiated land size means the different sizes of parcels of land allocated to women as compared to men. Gender matters when it comes to understanding why and how men and women access services. And the gender of other people sharing a home also seems to matter in this Ethiopian example. It is a complex web of structural factors that limit and constrain gender equity and impact on gender relations and gender-based opportunities.

Cultural assumptions Another example of a structural constraint to gender equality is deeply engrained gender stereotypes. They still exist and there is work to do in challenging them. For example, even in Sierra Leone, where we saw some positive efforts in gender staffing and inclusion generally, we also see culturally laden explanations provided by the country representatives for the gender division of labour within the processing plant. Examples of these stereotypes include:

> *"Women have endurance, patience and take care."*
>
> *"Men are not too careful or patient – they like to do jobs that demand a lot of energy – they do it quick and get it over with."*
>
> *To explain why women roast the cassava: "They are used to cooking and working with hot things."*
>
> *"Delicate [dangerous] jobs are done by men as they often lose fingers/limbs to the machines."*
>
> *To explain why processing starch – the straining, squeezing and drying – is done by women: "They have the patience."*

These explanations are embedded in cultural norms and traditional household divisions of labour. They are among the cluster of what we refer to as **structural** constraints to gender equality. Other examples of cultural assumptions are those mentioned in relation to the very few women working as extension officers. Cultural norms and stereotypes have a significant impact on the opportunities open to women as well as women's comfort in taking on non-traditional roles.

Chain actors – who does what?

Cassava may be "women's cocoa", as Maman Douala from **Cameroon** states,[1] but this does not by default bring equality or status to the women involved in the cassava chain. Analysis of where women are and what they are doing within an agricultural value chain or an innovation system is a critical first step in understanding gender dynamics: to understand gender relations within a specific value chain we need to map what women and men do. Meinzen-Dick et al. (2011:2) argue that recognizing women's roles throughout the value chain for food crop and market crops alike is a stepping stone towards ensuring that women's distinct roles in ensuring food security, especially at the household level, are better recognized.

An example of this is the gender division of labour in the **Sierra Leonean** cassava chain that can be found in Box 9.2. It provides a breakdown of the different chain actors and what women and men do within each segment of the chain: from farmer-based organizations (production-related activities and sales) to the processing centre and the different processing tasks, to marketing, transport and input dealers. It is quite comprehensive in presenting where women and men can be found in the key chain activities undertaken by innovation platform actor groups and which of the people doing that work are male or female. This first step of analysing the chain to see who does what (men, women, children), is a good way to begin the processing of understanding gender dynamics. Many tools are becoming available to support development organizations and companies in doing this.[2]

In Chapter 2 we introduced a gender and value chains analytical framework developed by Pyburn and Laven (2012). The framework built upon an existing analytical tool for value chain empowerment (KIT et al. 2006) by adding two key elements from gender studies and sociology – structure and agency. These elements have proven very useful in engendering value chain development. We return to the concepts - structure and agency - in relation to innovation platforms in the conclusions to the book as we reflect on how innovation platforms function and the dynamics at play. However, in order to embrace gender equity and inclusion within an agricultural innovation systems approach, we need to look beyond just the chain (activities and governance) and chain actors, to the chain supporters and the context also.

Research and extension – chain supporters

> *Incorporating gender issues more widely and systematically into agricultural research, development and extension systems will contribute significantly to meeting the food needs of the future population or ensuring that productivity translates into improved welfare for the poor*
>
> *– Meinzen-Dick et al. (2011)*

1 See Case 4.3, this book
2 For example, the Agri-ProFocus gender in value chains network: http://genderinvaluechains.ning.com/

Box 9.2 Gender division of labour in the cassava chain in Sierra Leone

Farmer-based organization

In production At the start of the season, farmer-based organizations know if the processing centre will pick up cassava from them. This is done on a rotational basis. Women are very active in terms of determining the price for cassava at the local market. They negotiate with group members in fixing the sale price of cassava per plot. Prices at the local market vary. When the time comes to sell, the women go "window shopping" – they make calls and find the price at the local markets. The price must allow the women to make a profit.

Men	Women	Both
Clear land (land preparation)	Plant and carry bundles of stems	Weed
Construct ridges	Harvest leaves	
Harvest cuttings	Transport cuttings from field to road	
Harvest tubers	Collect and load tubers in bags	
Lift bags and load trucks	Harvest in smaller plots	
	Carry tubers on their heads to market and sell	

Sales There are two sales options: either selling to the processing centre or to the women in the group (i.e., selling a full field of cassava). Cassava is seen as a woman's crop – as women do a greater part of the work. Women tend to be more concerned with the leaves, which they use in sauces (cassava leaf sauce). Women know the leaves that are good for sauce (e.g., making sauce with the ones with the red stalks do not need so much palm oil, while the white stalks need more). Women at the processing centres now package the dry, milled leaves to sell in the market.

Processing centre

- Women peel and wash the cassava, as well as roasting it. Women sieve the dry pulp after men then press it, removing what is not well grated (fibres, etc.). Men handle the grating machines and grater as well as the pressing machines (hydraulic presses).
- After roasting, women sieve the roasted gari, weigh it and put it into the plastic bags. Men handle the sealing machine. For product sold in bags, a stitching machine is used by men.
- Processing starch is a woman's job. The straining, squeezing and drying is done by women. Also flour – women cut the cassava into chips, in processing centres without slicers. And women dry the cassava by spreading it out in the sun.
- Milling is done by men operating the machines. Sieving is done by women. The steam drying of cassava chips is done by men.
- Women take care of waste material and cleaning of the machines, floor, scrubbing, etc. Men regulate the fire in roasting.
- If there are few men, then women will replace men in the typically "male jobs", and the same is true for men replacing women in "women's jobs". That said, generally the gender division of labour is quite distinct.

Other

Marketing Retail is done purely by women. They carry the product on their heads and sell it. In wholesale shops, the majority of the sellers are men, but women also sell wholesale. Trading tends to be done by women at the farm gate, and marketing tends to be a woman's business also, except for wholesaling.

Transport Men drive the vehicles. Women move the product from the farm to the road. Men then load the trucks.

Agro-input dealers Men only.

– Lansana Sesay and Alhaji Massaquoi (Sierra Leone)

Agricultural research has lagged far behind health, nutrition and education in terms of acknowledging that explicitly addressing gender is "one of the most effective, efficient and empowering ways to boost development and address poverty" (Meinzen-Dick et al. 2011:2). A key shortcoming of research, development and extension systems is the "pipeline" way of thinking: what we have discussed as the "transfer to technology" paradigm of getting new technologies from researchers to farmers via extension workers. To become more gender-responsive involves focusing on the system as a whole and ensuring that feedback loops are in place to get user needs and priorities higher up the agenda (Meinzen-Dick et al. 2011:22). UNCTAD identifies five key areas for addressing gender implications in agricultural research and extension: research and development, extension, technology adoption, evaluation and priority setting, and using the results from evaluations to inform the next cycle (UNCTAD 2011:7). In this section we focus on issues primarily related to the first two: women in research and development, and, women and extension.

Women in research and development

The proportion of women in agricultural research is abysmally low in West African countries: 7–10% (UNCTAD 2011:7). Sub-Saharan Africa is at 18% (ibid.); somewhat higher according to another source, which claims that one in four sub-Saharan agricultural researchers are women (Bientema & Di Marcantonio 2010). The African Women in Agricultural Research and Development Programme (AWARD) supports and fosters the technical and leadership capacity of African women researchers (Meridian Institute 2013:9). The Meridian Institute report for the Bill and Melinda Gates Foundation underscored the important role that women researchers can play in building linkages to the large numbers of smallholder farmers, particularly in Africa, and in ensuring that research is demand-driven and suited to farmer needs (ibid.). That said, we see from Table 9.1 the imbalance of male versus female researchers in the national agricultural research institutes involved in the DONATA innovation platforms initiative. The exception is the Njala Agricultural Research Centre in **Sierra Leone**, where the DONATA initiative is based in that country. In the past only men were researchers, but now women are also employed in such jobs. In fact, at the Njala centre there are more women than men overall, and of the approximately 20 people doing basic scientific research there are almost equal numbers of men and women.

Meinzen et al. (2011:17) point out that while some attention has been paid in recent years to involving women in participatory adaptive research and looking at the gender differences in impact of a particular technology, the real gap is "upstream": women (and small farmers) are not involved in priority-setting or decision-making within the research institutes (ibid.). This is echoed in the empirical work undertaken as we look at where the women are in the national agricultural research institutes involved in DONATA: what is referred to as "gendered staffing patterns" seen in the CGIAR system as well as in the national agricultural research systems (Meinzen-Dick et al. 2011:20, 49).

So what do women do within research institutes? As in most fields and in most countries internationally, women in management positions are very limited when it comes to research institutes. The national agricultural research institutes involved in DONATA are no exception. In **Cameroon** there are no women in senior management positions of the national agricultural research institute. There are however, several women in middle management positions: one female head of a research station, two female heads of laboratories and many women heads of administration and finance. Likewise in the **Republic of Congo**, there are no women in senior management but there are several in middle management positions: one woman is responsible for a laboratory and four responsible for research programmes. In **Burkina Faso**, by contrast, four women, a surprisingly high number, hold management positions.

In **Mali**, the national agricultural research institute has two women acting as programme leaders: for the fruit and vegetable programme, and the laboratory for food technologies. There are also female programme coordinators in the general management of the research institute. The majority of the accountants are women and there is a female head accountant for the central laboratories. Female researchers are mostly project leaders or unit or portfolio leaders: there are eight women in these positions and 66 men. All the secretaries are women and there are many women working in the central laboratories.

In **Sierra Leone**, beyond what was already discussed above in relation to the researchers, women are well-represented in the nutritional wing of the Njala Agricultural Research Centre. It is made up entirely of 20 women: there are four nutrition instructors at the headquarters and in each zone there are two nutrition instructors. Extension and outreach, by contrast, are done completely by men (nine of them). Nowadays, extension/outreach and socioeconomics (nutrition) are one unit, but there are no women at the senior management level: most women are at a junior level (e.g., nutrition instructors). This relates to the level of education of the person (not their age) as the junior staff hold certificates in agriculture or diplomas, but not university degrees. Nutrition scientists (senior staff), by contrast, have university degrees: two women are in these positions.

Gendered research Research methods and processes impact on research outcomes. The need for more and better sex-disaggregated data (FAO et al. 2010:106, Meinzen-Dick et al. 2011:40) and for productivity models that are

Table 9.1 Estimates of female and male researchers in participating research institutes

National agricultural research institute	Male researchers	Female researchers
Cameroon	Approx. 148 (of 183 total)	Approx. 35 (20%)
Republic of Congo	114	6
Mali: Sotuba station	66	15
Burkina Faso	126 (average over 10 years)	27
Sierra Leone: Njala Agricultural Research Centre	12	10

stratified by gender and crop (Ragasa et al. 2013:437) are becoming more and more recognized by researchers and critics alike. CORAF/WECARD has recently put a gender policy in place to support the collection of more gender disaggregated data:

> *The results of a research and agricultural development sector that is more gender sensitive, will not only be beneficial to the 328 million inhabitants of the sub-region, but will also constitute an essential tool for the international and bilateral development partners, by increasing the availability of disaggregated data in the agricultural research sector in West and Central Africa.*
>
> *– CORAF/WECARD website: www.coraf.org/en/gender-policy.html*

In addition to gender-disaggregated data collection and gender-sensitive modelling, gender is also a factor when it comes to technology development or technological innovation, let alone institutional innovation. When technologies are being developed, questions like these are important: Whose varietal preferences are being taken into account (women's, men's, consumers')? Are technologies (whether for processing, field work or new varieties) directed towards women's or men's specific roles in the agricultural production and processing chain (e.g., is selection based on storage, taste, ease of processing or what other criteria)?

At the **Sierra Leone** Agricultural Research Institute, when technologies are being developed, the technologies are tested within the innovation platform. For example, when women come for the technology-testing sessions, their preferences lie with the palatability and mealiness of the cassava: mealy varieties have a sweeter taste and boil soft. Women are less concerned about yield, whereas men tend to look at yields and commercialization, wanting the highest yields possible. Women look at the leaves (for sauces), the price at the market (the leaves that fetch a higher price). These gendered preferences are important to bear in mind: there are differences between the perspectives of key actors. The experience in Sierra Leone is backed by the literature, in which women are recognized as having different preferences in varietal selection, beyond financial returns. These preferences often include the nutritional value and health benefits of the variety (Meinzen-Dick et al. 2011:19).

Women and extension services

Several questions guide an examination of how to target women in rural advisory services: **who** needs to receive the message; **what** message and why; **where** is the message given? **when** is the message given and **how** is the message communicated (the approach); who is the **messenger**? (Carter & Weigel 2011:1, Meinzen-Dick et al. 2011:62). These categories are certainly valid; however, this approach adopts the prevalent and linear research–extension–farmer paradigm, which innovation platforms challenge and more contemporary approaches to agricultural knowledge sharing and communication contest. While these

questions engender the traditional transfer of technology model, they do little to re-jig the innovation process or reflect multi-stakeholder character of innovation processes. But a gender lens can do that. It can shake up the status quo and support a systems approach to innovation and trigger systemic change.

Reaching women farmers (the "who") Extension – or rural advisory services – get information to farmers. Whether it be for a new variety or a different agricultural technique, extension services are a channel of communication between researchers, government and farmers in many rural areas across Africa. Ragasa et al. (2013) demonstrate with empirical work done in Ethiopia how access to extension services translates to statistically significant differences in technology adoption and agricultural productivity. Further, they quantify the limited access of women to extension services as compared to men, and the effectiveness of extension in terms of poverty reduction. To sum up, extension services benefit farmers, but female farmers have limited access to these services compared to their male counterparts.

Ragasa et al. also write of the "persistent female bias in access to productive resources and inputs" (Ragasa et al. 2013:466). While women play key roles in food crop production and processing and in household food security, they have limited access to resources critical to improving the quality and quantity of their output (UNCTAD 2011:ix). The assumption or stereotype embedded in extension services is that men are the farmers and heads of households making most production-related decisions (World Bank et al 2009:258; Manfre et al. 2013). This caricature of "the farmer" as a man gets in the way of female farmers being taken into account (World Bank et al. 2009:258). Manfre et al. (2013) endorse an approach that accepts any individual who calls him/herself a 'farmer' to be considered a farmer by extension and advisory service providers.

The bias against women in agriculture, coupled with the "triple challenge" of market, state and community failure (World Bank 2010:xxv) makes service provision, including agricultural extension, very difficult. But there are persuasive arguments for targeting women in rural advisory services. Drawing on categories distinguished by Apotheker et al. (2012) three main arguments can be made and:

- **Social justice** "Women farmers have as much right to agricultural information as men" (Carter & Weigel 2011:2).
- **Poverty alleviation** Increasing yields is not enough to ensure food security: "supporting disadvantaged women (and men) to enhance their skills and capacities to farm more productively is without a doubt an important development objective" (Carter & Weigel 2011:9). Reducing inequalities in human and physical capital between male and female farmers in sub-Saharan Africa could potentially increase agricultural productivity by 10–20% (Udry et al. 1995 cited in Meinzen-Dick et al. 2011:7).
- **Economic/business** "Better services for women would likely result in better production and productivity" (Carter & Weigel 2011:2). And more inclusion leads to more, better and different kinds of innovations (UNCTAD 2011:17). An example of the business argument in practice is the experience of processing plant owner, Mr Bangura in **Sierra Leone**.

> He included vulnerable groups (blind people, amputees and polio survivors) in the operations of his processing plant but does not approach this participation as a charitable effort on his part. He works only with those people who can effectively engage and earn money: that this reduces their dependency is a positive spin-off.

That said, women farmers are not a homogenous group. Rural advisory services operate within a context with myriad power dynamics at play related to religion, caste, ethnic groups, geographic origin, education, economic standing, age, and of course, gender. As such advisory services can either act to reinforce or to cut across these power differences in ways that favour or further disadvantage marginalized groups (Carter & Weigel 2011).

What do women farmers want to know? Now we come to the actual content – the information or knowledge being communicated by the extension workers to the farmer. Evidence suggests a mismatch between the kinds of services rural women receive and what they really want (Jafry & Sulaiman V 2013a:434). Unless new varieties and technologies take women's needs and preferences into account, the new technologies developed are unlikely be taken up by women (Meinzen-Dick et al. 2011). Women and men often have different roles in agriculture (see the example in Box 9.2 on the gender division of labour in cassava value chain in Sierra Leone). As such, there may well be gendered differences in interest in different techniques (Carter & Weigel 2011:4). Women may be more interested in processing techniques, as they are responsible for processing cassava, whereas men might be more interested in yields and commercial value. Likewise, the choice of varieties is gendered: where women may choose for a cassava variety with tastier leaves and faster cooking time, men might prefer a variety that is ready for harvest sooner. Requiring extension approaches to take into account gender roles in households, society and agriculture may entail providing legal advice in services and facilitating discussions on gender roles within farmers' organizations (UNCTAD 2011:7).

Engendering extension (the approach) There are some good arguments for employing female extension workers, and some reasons that it is hard to do, as well as some possible ways to do it anyway (see above). But what to do where there are simply not enough women who are qualified and interested in working in extension? More than the sex of the extension worker, the approach to extension services is paramount. We now look at points to bear in mind in the design and implementation of gender sensitive rural advisory services. The approach to extension covers the "how", "when" and "where" questions raised by Carter and Weigel (2011).

In Zambia, a participatory extension approach promoted by the Ministry for Agriculture, Food and Fisheries, while well-intended, missed the mark as women were not attending meetings. If they did come, they were silent, and activities were instead targeted towards the male heads of household (Beuchelt & Badstue 2013:717). As a result, and learning from the failures of the earlier programme, in the early 1990s a gender-oriented participatory extension approach was embraced, and staff were trained in gender awareness and in using a household or family approach and later a "couples" approach (ibid.). These approaches are just one example, but provide inspiration and evidence

for the impact that is possible at the household level and with a non-conflictive process that benefits both women and men in the household, as well as the children (ibid.:718).

A recent educational film produced by Access Agriculture[1] outlines the challenges and offers some inspiring examples related to extension reaching women farmers. The extension workers in the film noted the detail that women grasp in farmer field schools. The film looks at women's demands for extension and advice and how extension workers adapt methods, content and timing to women's needs, as well as having to deal with issues related to access to land, inputs and credit; and market access (Access Agriculture 2013).[2] Concretely, ways of supporting women's participation in extension activities may include **setting quotas** for female participation in trainings and in decision-making positions in farmers' organizations, conducting specific **training for women farmers** on technical issues or leadership skills, and **extension worker training on gender sensitivity** (Carter & Wiegel 2011:3-4, Meinzen-Dick et al. 2011). Other considerations may be whether to use individual versus group-based approaches or conventional versus farmer field school approaches (Meinzen-Dick et al. 2011:20).

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An important piece in considering gender dimensions of extension is **where** and **when** training or other advisory services are provided. Mobility can be a constraint to women's participation, and often women have household responsibilities to manage alongside their productive activities in the field. Time of day and where the training is organized in the growing season will influence availability (Carter & Weigel 2011:4). Work through existing women's groups is an entry point for spreading extension messages (Carter & Weigel 2011:7).

Who delivers the message? Cultural assumptions impact on the career choices and opportunities for women in the agricultural sector and elsewhere. Only 15% of extension workers globally are women: 7% in West Africa (Carter & Wiegel 2011:6). Often the issue is raised as to whether resources should be invested into promoting women extension workers. Arguments to support female extension workers include that in some contexts female farmers are more comfortable speaking to other women about the challenges they face, that in some contexts only women can speak directly to other women, and that female extension workers can act as role models (Carter & Wiegel 2011).

But why are there so few female extension workers? Four reasons are outlined in the Helvetas brief (Carter & Wiegel 2011:6) on targeting women in rural advisory services, as well as how these challenges can be addressed. Each will be outlined below.

Recruitment criteria are based on formal qualifications in agriculture, which few women have. If they have such qualifications, they likely do not have the rural background needed to interact compellingly with farmers. The solution is to reconsider recruitment criteria to include communication and practical experience, which are also important in extension work and may encourage women to apply. Another solution is to train local women.

1 See www.accessagriculture.org/node/515/en

2 The film includes an interview with Faso Kabe in Mali, a company also involved in the DONATA innovation platforms in that country.

Mobility Travelling alone or arriving home late at night (part of the job for an extension worker) may be difficult for women. Further sometimes the necessary mode of transportation – bicycles or motorcycles – may not be considered suitable for women, putting them at risk of social disapproval and its many ramifications. The solution is to adopt gender-sensitive working conditions. Examples are ensuring that female colleagues are provided with transport home, that they have flexible working hours, and that child care is available.

Reliability In some countries, women extension workers do not stay long in the post as they defer to their husband's career path and his job transfers, or take on family obligations (such as becoming a mother).

Acceptance Women extension workers often face resistance in gaining acceptance from male farmers. Solutions include working with couples, encouraging the husbands of female staff to join in office events, and promoting gender sensitivity among male extension workers.

These constraints are all structural, relating to education opportunities and cultural norms and expectations. The solutions relate both to **structure** and **agency**. For example, **reconsidering recruitment** is a structural solution, whereas training local women is about generating agency among those women. Adopting gender-sensitive working conditions is a structural (behavioural change) solution, whereas promoting gender sensitivity among extension workers is both structural and about generating agency among those male workers.

Efforts to get more female extension workers trained in West Africa are, according to one study (Akeredolou 2009), constrained by perception bias, limited access to information about opportunities for further education, family concerns and time constraints, and social, cultural and religious barriers (Meinzen-Dick et al. 2011:72). These echo those listed above.

Inclusive innovation platforms

Now that we have been included, we should not be left out again

– Jennifer Kamara, trader, Pate Bana Marank platform, Bombali district, Sierra Leone

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Innovation platforms are not neutral mechanisms (Cullen et al. 2013). They influence and catalyse change, and in that process different voices are heard and prioritized. But just because people are at the table does not mean they have an equal say (ibid.). Multi-stakeholder processes – like those that innovation platforms aspire to – become even more complex when seen through a gender lens (Kingiri 2010:34). How can innovation platforms actively engage with different groups of men/women/youth and vulnerable groups? Where are men, women, youth, vulnerable groups (e.g., polio victims, blind people, amputees) in the innovation platform in terms of representation, participation, leadership and decision-making? And what are the benefits of participation? Bringing a gender lens to innovation platforms allows for a reconsideration of

how knowledge is generated and used and how to ensure that the voices of all stakeholders are heard and recognized.

We have limited examples from DONATA as to gender inclusive innovation platforms, but we do have a very inspiring example from one cassava platform in **Sierra Leone** that took up inclusion – beyond just gender – and made it work for the individuals involved as well as the platform as a whole. See Box 9.3.

Only one innovation platform is working with polio survivors and blind people – the Pate Bana Marank platform in Makeni in Sierra Leone. What specifically about this innovation platform made the inclusion of blind people, amputees and polio survivors possible? Inclusion did not just happen. This story is set in post-conflict Sierra Leone where the blind people, amputees and polio victims in the community were beggars. It used to be that the "nuisance" was apparent on the roads heading towards Freetown: many beggars were on the road and children who should be at school were pushing wheelchairs or leading the blind with sticks.

Box 9.3 Inclusion of vulnerable people in Pate Bana Marank innovation platform, Makeni, Sierra Leone

Saidu Kanu, a polio victim, heads the fabrication unit of the Binkolo Growth Centre, while Jennifer Kamara, a blind woman, is assistant leader of the marketing unit of the same platform. These positions were equally contested by other innovation platform actors, but were won by these two.

In the Pate Bana Marank innovation platform, polio victims serve not only as blacksmiths but are also involved in the training of able-bodied men in the fabrication of farm tools. Jennifer Kamara has gained respect and independence through the marketing of gari. She says, "'I do not depend on my mother to take care of me any longer; I can now take care of myself and my children".

She normally receives gari from processors through hire purchase, and coordinates the distribution to and recovery of loans from other marketers. Her clients are many, and include local traders in her community and the surrounding villages. Due to her prompt payment of all loans received, processors have developed trust in her to continue business. The element of trust she won helped her gain her leadership position. Her clients have always commended the quality of the gari she sells and would never want to change it.

Before joining the innovation platform, some physically challenged people used to go from one house to the other begging for money and other items. Gainfully engaging both the blind and polio victims has reduced the nuisance in the streets in areas where platforms operate, and has enabled these people to make meaningful contributions to the country's economy. Some polio victims produce and sharpen tools for the farmers in the innovation platforms, whiles others are engaged in packaging, peeling and labelling. The blind come as marketers of finished processed products.

Actor category	Vulnerability	Role
Marketers	Blind	Sell processed products from the innovation platform
Blacksmiths	Polio victims	Sharpen tools for farmers Fabricate new tools for farmers Fabricate equipment for processors
Agro dealers	Amputees	Sell insecticides and fertilizers to farmers

– Lansana Sesay, Sierra Leone

In **Sierra Leone** it is not uncommon for polio victims to take up the blacksmith trade. At the processing centre the beggars would come around when the innovation platform meetings were taking place, and platform actors asked what they could do as part of the platform. Starting with one person, others in wheelchairs saw what the first person had done, and said they could work as apprentices. This usually happens at the farmer-based organization level, but in this case, the blacksmith in the processing centre produces and sharpen tools for farmers. Relationships between the processor and polio victim-blacksmith were built up, and trust was key to the process.

When it comes to the inclusion of blind people in the platform activities, a forward-thinking processing plant owner and a researcher from the national agricultural research institute thought that the innovation platform could make an impact. They got in touch with the Cotton Tree Foundation, a charity for the blind. When the innovation platform needed people to work as marketers, and the processor realized that the blind community members could identify the bank notes, he gave them some samples to sell. He trusted them to sell and return to them with the funds, which they did. This "test" was a way to see how the blind traders could manage despite not being able to see. Again, trust and relationship building were key.

But where are the women and the more vulnerable actors? And what are their roles in the innovation platforms? Boxes 9.4 and 9.5 illustrate how women and men participate in the innovation platforms in Sierra Leone and The Gambia, and who does what within the platform.

Jennifer Kamara has quite a story. Before she became blind, she had gone to school and had training in management, so now, despite her blindness, she is the leader of the marketers in the innovation platform. She is the leader not only of the other blind people active in trade within the platform, but also of the able-bodied, sighted people. Every Monday is market day, and Jennifer is one of the women who trades the cassava products. She is motivated and wants to learn Braille to contribute better (**agency**). She wants to earn more be gainfully employed, eventually being paid on a monthly basis as opposed to being paid based on how much she sells. She has a vision for her future and is actively pursuing it through the platform.

Box 9.4 Engendered management of innovation platforms, Sierra Leone

The Sierra Leone innovation platforms invite all categories of people to join, whether physically challenged or not. Men and women are part of the executive. All stakeholder categories of the innovation platform, i.e., farmer-based organizations, marketers, processors and transporters and so on, constitute the platform. Within each stakeholder group we find the following positions. The position of chair and vice-chair are democratically contested by both men and women, but the chair is usually won by a man and the vice-chair position by a woman. The treasurer position is also held by a woman because of the trust given by the groups. Representatives of each stakeholder group form a coordinating body which oversees the activities of the innovation platform. In relation to critical decisions made by the innovation platform, a general meeting of all platform actors is summoned in which a motion either in favour or against the matter is moved. The outcome of this motion becomes binding on all actors.

– Lansana Sesay, Sierra Leone

Box 9.5 Women in management positions in a Gambian innovation platform

The innovation platform has recognized the importance and role of women, which made it possible to have four women in the executive, and a key position is handled by a woman (Aja Mam Buso Njie) as a result of women advocating for that post. In fact they were able to establish a link with an urban business – the Maroons supermarket – allowing the women to sell their processed products such as baby food, maize grits and flour.

– Ansumana Jarju, DONATA focal point, The Gambia

Benefits of inclusion Participation in an innovation platform has many benefits for the women and vulnerable groups who participate: it is a means for a livelihood, it allows the physically challenged to be self-reliant, the physically challenged and the women participating in the platform are recognized as useful people in their communities, a feeling of belonging brings security, and the participants contribute to the development of their society. The benefits of inclusion begin with recognition for work done and for skills acquired. Yama Gaye in **The Gambia** (Box 9.6) was trained as a food processor and then went on to train others; as a result she has gained status in the community. Her income also went up and she is respected for the leadership she is showing.

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Other examples come from Sierra Leone. Saidu Fornah, a polio survivor, explains how he joined the Binkolo Growth Centre and now earns a living as a blacksmith in the Makeni platform, Bombali district, in Sierra Leone: "In the past I was not considered in any decision-making processes; now anywhere I go I am considered important because of my role in the innovation platform."

Such a shift in status was also the experience of Jennifer Kamara, a blind trader in the Pate Bana Marank platform in Sierra Leone: "Participation has improved my status in the community. When I attend a meeting, people listen to me. I am not discriminated against

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Photo: Geneviève Audet-Bélanger

Polio survivors working as blacksmiths – tool making and repairing old farm implements at eth Makeni innovation platform in Sierra Leone.

Box 9.6 Gaining status by making cereals in The Gambia

Yama Gaye says that she has gained recognition from NGOs in the area due to the skills she learned when she was trained as a food processor through DONATA support. She was able to then train 20 women on improved techniques such as making a baby food from maize (referred to as "cerelac") and packaging it in sachets and tins. She also processes maize into pancakes and popular cuscus that many people appreciate.

Yama Gaye's status has now changed, and she is hired by local development agencies. She leads training sessions for project beneficiaries. This has allowed her to increase her income and exposure. As a processor, she has adopted standard hygiene procedures, which has generated interest from her children and others in the community who now want to learn these skills. This has had a positive impact on her household and on her immediate environment.

– Yama Gaye, producer/processor, Kerr Jarga innovation platform, interviewed by Ansumana Jarju, DONATA focal point, The Gambia

anymore. Before, people thought blind people were useless. Now I am respected in the community and across the chiefdom; it is also the case for polio victims."

Inclusion in the platform is playing a role in ending dependency and providing meaningful work for people who have been marginalized in their communities due to physical challenges or illness. This works both for the so-called "victim", but also for the entrepreneur, says Ismail Mugum Bangura, the owner of the processing plant and president of the Pate Bana Marank innovation platform in Makeni, where inclusion is so innovative: "I hate giving free money. If by engaging these disabled people… [they] can really assist me… If they can spend their time to seek how to find money it will help all of us to… reduce the dependency." [author's addition]. When Mr Bangura was a politician, he would give away "free money" to people. He does not want to so any more, only if people are working for the money. In his processing plant even blind people and polio victims are offered meaningful paid work.

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Photo: Geneviève Audet-Bélanger

Ismail Bangura, Innovation Platform Coordination Team Chairman and owner of the cassava processing plant. Here showing processed cassava products at the showroom of the Binkolo Growth Centre on Missiri street, Makeni, Sierra Leone.

Mr Bangura goes on to explain how the physically challenged people in the community initially reacted to his changed ways: "'Mr Bangura, nowadays you don't give us money' [they say]. I say 'yes, because I have value for it. If you want me to give you money, [then] work for it'" [author's additions]. Mr Bangura's response is a personal one as well as a business decision.

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Inclusion also has positive impacts for the innovation platforms as a whole. These include the following: the innovation platforms are unique, popular and a source of pride; more contracts are earned; the income level of the innovation platform improves; feedback on processed products is brought from consumers via the marketers, and this creates room for improving the products.

Conclusions

Diversity brings resilience A key aspect of resilience is diversity and multi-stakeholder participation. Including diverse categories of men, women and youth, and more marginalized members of society, is a part of that resilience and indeed sustainability. The weak uptake of gender and inclusion across the DONATA initiative highlights that this is indeed a challenge. An interesting point for reflection is why Sierra Leone seemed to be so far ahead in terms of inclusion. Is there a link between the post-conflict context and the role of women in the innovation platforms, the recognition of women within the research institute, and the inclusion of more vulnerable groups (blind people, polio survivors, amputees etc.)? We saw in the Sierra Leone case a strong business angle as well as the social justice or rights-based justification for inclusion.

Meeting the gender equity and inclusion challenge Without question, the next generation of innovation platform projects across West and Central Africa will need to take up the gender and inclusion challenge with both rigour and vigour. Luckily there are resources and frameworks from which to draw inspiration, not the least, focusing on learning as opposed to analysis (Kingiri 2010, 2013) and embracing both men and women in the gender equity and inclusion challenge. The entry point of systems empowerment (not just women's empowerment) is another powerful approach (ibid.). What this chapter does not address, and indeed did not come out at all in the field work for the DONATA cases, is that changing demographics of farming communities in Africa. Young people need to be "included" also.

Funding inclusive innovation platforms A key assertion of many innovation platform initiatives is that they are "pro-poor": that they are reaching and involving poor farmers, and in some cases specific categories of people (women, youth, blind people, amputees, HIV-infected or polio victims). Inclusion has a cost. If innovation platforms have a pro-poor focus, then they are directed towards resource-poor actors who are least able to contribute to the costs of the innovation platform functioning (Gildemacher et al. 2011:63). This imbalance needs to be addressed somehow. In the conclusions to this book we tackle the question of whether innovation is a public good and which aspects might be

considered a public good. If so, then we need to seriously consider the role of government and policy in supporting innovation processes and in creating the space for vulnerable or more marginalized groups to participate. These are important questions that remain and have not been answered by this one initiative.

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10 KNOWLEDGE AND INFORMATION SHARING

Previous page: Women maize trader and processors at an innovation platform meeting, The Gambia, March 2013

Photo: Geneviève Audet-Bélanger

10 KNOWLEDGE AND INFORMATION SHARING

Remco Mur and Sidi Sanyang

The success of most innovation platforms rests on the level of knowledge and information sharing among the different actors, both within and outside of the platform. Knowledge and information come in different shapes and sizes and are shared through various means and for different purposes. By providing meaning to information, knowledge is developed and learning takes place. Through stimulating interactions, knowledge and information sharing between stakeholders, joint learning can take place.

Chapter 6 took up the issue of internal communication – the how, what and why of stakeholder interaction within an innovation platform. We have seen how stakeholder interaction and communication among stakeholders within a platform is being shaped and can be facilitated. This chapter looks at a next step – how the platform communicates to external stakeholders and the broader community.

At local level, knowledge and information sharing tends to be related to **technical or hard knowledge**, such as new tools and seed varieties, information or training on good agricultural practices, the availability and access to inputs and market information. But **"soft" knowledge** is also shared and critical for success. This is knowledge that is difficult to articulate, unlike "hard" knowledge. It often is tacit or implicit: people are not aware of it. Soft knowledge is developed through experience and interaction with the others. In this case, examples of the soft knowledge shared include important local and regional meetings, emerging opportunities in the market, bottlenecks experienced by platform stakeholders, and changing policies at local and national levels. Learning comes about through experience and interaction, and involves both hard and soft, explicit and tacit knowledge.

External communication regarding platform activities is also important: making public their objectives, participants, actions and successes. In this way, platforms increase their influence and visibility by expanding their network of active stakeholders. External communication is a means to influence policies and get support of various institutions. Further, it allows an innovation platform to share knowledge and experiences with other platforms. External communication allows the challenges platforms face to be shared more widely, and enables them to be better addressed. It can increase political leverage and improve relationships among value chain stakeholders as well as building cohesion within the platform itself.

That is the **why** of external communication. But we also want to know **how** innovation platforms communicate with the public, with non-participants, with potential constituents, etc.

Monitoring and evaluation provide important mechanisms for innovation platforms to collect, reflect on and share information. Monitoring and evaluation for innovation is geared towards joint stakeholder learning, in addition to its more traditional roles of accountability and informing project management. However, there is a need to create a monitoring and evaluation strategy and practices at the project level (in-country and cross-country) as well as at the level of the individual platform. How this is done in DONATA, and what the constraints are, are also described in this chapter.

Integrated agricultural research for development using innovation platforms has its roots in scientific ground, and uses a theoretical rather than a pragmatic approach. So it is often difficult to translate it into action at the producer level. So far, the rationale (the "why") and method (the "how") to share and transfer scientific knowledge to the field have not been documented extensively, despite information and knowledge sharing being a core activity of innovation platforms.

The DONATA innovation platforms have used a number of communication tools and strategies for external communication (as well as for internal communication with platform actors). These include print and electronic media, video, mobile phones, local and national radio, actor-to-actor communication, field days, weekly market days, television, photographs, posters and learning visits. These kinds of activities increase the visibility of the platform and its activities, raise awareness of the broader public on key issues (both technical- and process-related), and can even influence policy.

Key questions for this chapter include:

- How has the innovation platform communicated with its external environment? For what reasons? What media and mechanisms were used, and with what results? What worked best for what purposes, and in terms of reaching a significant number of people in an effective way?
- How were knowledge and information exchanged between different platforms on the same level and at different levels? For what purpose? What media and mechanisms were used, with what results? What worked best for what purposes?
- What have been the key events for the national research institutes for cross-country knowledge and information sharing? For what purpose? What media and mechanisms were used, with what results? What worked best for what purposes?
- What have been the key strategies to monitoring and evaluation in DONATA? For what purposes? What were the constraints in developing and implementing a monitoring and evaluation strategy?

This chapter examines the more innovative and successful strategies that DONATA platforms have developed and used to exchange, promote and disseminate knowledge within the platforms and with the actors involved. It also covers some failures, as we can learn a lot from flops too. It aims to explain key strategies from the case countries and capture some of the outcomes and impacts of each strategy.

Communication with external stakeholders

Fast-moving technologies are making it easier and quicker to communicate. It is fascinating to see how new media such as mobile phones have transformed sectors in Africa, for example to gather and share information such as market prices. Radios and the press also have their role at the local and national levels to share information and raise awareness. Media and communication tools are used for different purposes at the micro and macro level. On the micro level, they serve the purpose of sharing and informing. At the macro level, they are a strategy to improve visibility, capitalize on experiences, influence policies and promote cross-sectoral exchange. Bridging science and practice might even be a strategy towards **sustainability** in which information and knowledge sharing is a cutting edge theme. DONATA's experiences can help us understand how innovation platforms have used various tools and media to link science to practice.

Three hundred field days, 12 radio programmes in local languages, six articles in the *Sidwaya* daily newspaper, and 333 training and refresher courses on different issues: this is how the innovation platforms in **Burkina Faso** shared knowledge and information with external stakeholders for different purposes. Innovation platforms and their actors often need or want to share information and knowledge with external stakeholders. They have different reasons for doing so, and hence target different actors. The platform's entry point often determines what the purpose and who to share the knowledge and information with. For example, production-oriented platforms are likely to share information on the new varieties and related agricultural practices. A policy innovation platform is more likely to share information and knowledge with higher-level actors in order to advocate for changes in certain policies or for support to the platforms.

In many cases, platforms evolve and initiate new activities, not necessarily linked to the entry point only. In Cameroon, The Gambia and Sierra Leone, the entry points for the local platforms were related to production. But all platforms now also address processing and marketing. They have adopted a variety of strategies for sharing knowledge and information and to target different stakeholders.

Purposes of knowledge and information sharing with external actors

The most important purposes to share knowledge and information with external actors include:

Scaling out successful technical innovations A major purpose of the DONATA innovation platforms is to jointly test and adopt new technologies, mostly related to maize or cassava production or processing. Once new technologies prove useful to platform actors, the platforms attempt to scale out those practices to other farmers in the same community or elsewhere. This is done in various ways, depending on the technology and other factors, including geographical features, cost implications, the availability of local media. In

most cases, the platforms use combinations of tools and approaches to share information and knowledge.

Facilitate joint learning In **The Gambia**, the lead farmers from different local platforms are taking responsibility to monitor the technical issues at each other's platforms. They conduct joint monitoring visits. Field convergence meetings and field visits are organized involving actors from different local platforms. The local platforms are relatively close to each other, which makes such exchanges easier. During those visits, the focus is on mostly technical issue related to production or processing. Non-platform actors also participate in the visits.

Promotion of products A third important purpose of knowledge and information sharing is to inform the public about products developed by the platforms. A good example of this is the case of the **Republic of Congo**, where radio plays an important role in promoting mbala-pinda, a nutritious product made of cassava and groundnuts.

Influencing policy and gaining policy support In many cases, lower-level authorities are active in the innovation platforms. This was particularly important to ensure policy support to the platforms. In Chapter 8 we provide examples of how policy is influenced by the platforms, and vice-versa. Knowledge and information sharing place emphasis on influencing policies and interacting with policymakers. The cases show that the means of sharing between platforms and policymakers include direct encounters (meetings, field visits, workshops), as well as the use of mass media such as television and radio.

Increased visibility of the innovation platforms and their activities It is important for innovation platforms to be visible and acknowledged as a relevant mechanism for sub-sector development, to increase the platforms' political leverage to generate buy-in from policymakers at different levels, and to influence policy processes.

Ways of sharing knowledge and information

Often, the platforms apply multiple means of communication to share knowledge and information. They vary from traditional community announcers and community meetings to mobile phones and the internet. To promote a new variety, for example, combinations of farmer-to-farmer exchange, training, rural radio and technical information sheets are used in most countries. Box 10.1 shows how producers in **Burkina Faso** shared knowledge and experiences with their peers from other villages, provinces and even countries.

Meetings Different types of community meetings are used to inform non-participants on new promising practices. These meetings are informative rather than formative. Meetings between platform representatives and higher-level policymakers have also been organized. In The Gambia, such a meeting was held to lobby for subsidies on fertilizer and pesticides for maize. At the district level, platform representatives discussed with district authorities a reduction on tax levied on the platforms' products in regional markets. In Burkina Faso, platform representatives are engaged in multi-stakeholder

Box 10.1 Sharing information in Burkina Faso

Producers from other villages and other provinces come to learn from the experience of the producers. This is particularly the case for Namoro Arzouma and Dagano Moussa Joseph, grain producers in Burkina Faso, who receive many visitors on their farms each year. Field schools, guided tours, *vitrines* and other types of demonstrations are also very important sources of information. According to Dagano and Arzouma, guided tours contribute effectively to promote their products. Other means of communication include study tours and exchange visits. We note for example the journey by two other grain producers, Korgho and Oudou, to Côte d'Ivoire to share their experiences with their Ivorian colleagues.

–Taonda Sibiri, DONATA focal point, Burkina Faso

consultation meetings (*cadres de concertation*) to discuss the rehabilitation of rural roads to help maize trading.

Training and workshops In most of the platforms, training is provided to specific target groups. Training may involve people not participating in the platform as well. Trainers are from research or extension (public or NGO). Training is focused mostly on building skills related to specific production and processing practices. In **Burkina Faso**, workshops are organized to raise awareness of regional and national policymakers on the activities and benefits of the innovation platforms. This has contributed to the adoption of platforms as mechanisms for agricultural commodity development, resulting in the establishment of multi-stakeholder platforms for six new commodities. The Ministry of Agriculture and Food Security has integrated innovation platforms as a tool in agricultural development.

Fields visits In all countries, different types of field visits are organized to convince other stakeholders, both platform participants as well as external actors, of the usefulness and effects of certain new practices, or to provide them with specific technical information and knowledge on how to apply the technologies. Target groups vary, but always include peers, i.e., producers if it is a farm visit, and processors if it is about processing. Often, other value chain actors are involved as well. Field visits are also used to convince policymakers of the importance of innovation platforms as mechanisms for rural development.

In **Burkina Faso**, the platforms organize "commented field visits" (*visites commentées*) where the results of a new technologies are shown. Participants include a variety of actors. The immediate objective is to convince others that the technology is useful. During joint field visits (*visites conjointes*) the platform actors provide information on how a new technology works, which will allow other practitioners to apply the technology. *Vitrines* (demonstrations to compare agronomic practices and technologies), often set up by research, provide the opportunity to actors compare different practices addressing a particular problem.

Similar mechanisms are in place in the other countries. In **Mali**, farmer-to-farmer visits (*visites interpaysannes*) are organized. These visits might also involve other stakeholders, such as industrial processors, to show them the features of a new variety. **Gambian** platforms distinguish between extension visits, field days and field convergence. During extension visits, the extension worker provides recommendations on good agricultural practices, for example

the maize planting distance. In field days, the positive effects of a new technology or practice are shown. During a field convergence, demonstrations of the technology are given.

In the other countries, the innovation platforms organize similar events for similar purposes and target groups. Peer-to-peer visits seem to be an important way to share information and knowledge in order to promote new practices and technologies.

In **Burkina Faso**, the Minister of Scientific Research and Innovation, together with a number of governors and administrators made a field visit to the platforms in October 2011. That led to a greater level of awareness and buy-in.

Brochures, bulletins and other written extension material Platforms produce bulletins and technical information sheets to provide information on specific production and processing practices or related topics. The briefs are prepared by the extension agency and target producers and processors. The platforms in **Mali** and the **Republic of Congo** have used such methods. Examples include technical briefs on cassava diseases and new maize varieties. In Burkina Faso, the Fédération Nian Zwè publishes a bulletin on the platform activities in the local language.

National and local newspapers carry stories on the platforms and their activities and to promote particular processed products. Articles in the national media provide information on new production or processing practices, and on product innovations. They are also used to communicate changes in policies.

National and rural radio In many sub-Saharan African countries, national, rural or local radio is one of the most appropriate and effective media to reach large numbers of people. Platforms frequently use rural radio to spread information on new production and processing practices, and to draw attention to the platforms' activities. Radio is also used to promote certain products produced by the platform actors and to provide market and price information (e.g., in **Burkina Faso**). Radio is used to inform platform actors (as well as others) on relevant policies, such as the **Gambian** government's new policy on marketing maize grain. In some cases, media take part in the platform activities and meetings; in other cases they are involved as service providers to the platforms. Information disseminated through radio includes technical details on best practices, such as planting time, the use of fertilizer, and new varieties. In **Sierra Leone**, panel discussions between platform leaders in the regions are broadcast. The radio station, as a member of the platforms, offers free airtime.

Documentaries and television These are useful mechanisms to inform the larger public on the platform activities, new practices and products. In the **Republic of Congo**, the innovation platforms produced a number of technical documentaries that were later broadcast on national television and shown during farmer-group meetings. The topics included the introduction of new cassava varieties, and making *mbala-pinda*. The Gambian platforms also use national television to disseminate information on processed products to the public.

Platform actors benefit from information on fertilizer prices, shared on national television and radio. Often this information has a more public character and is not specifically targeting platform actors.

Agricultural and trade fairs Agricultural fairs provide a space for innovation platforms to create awareness on the platforms and their activities, and

to demonstrate new practices, products and their quality features, and product innovations. In **Mali** two events, the International Exhibition on Agriculture and the Week of Agricultural Research, provided opportunities to inform the public on the new agricultural practices, improved maize varieties and the processed products. The shows were attended by producers, processors, manufacturers, extension workers, seed companies, consumers, etc.

Use of information and communication technologies Tools such as email and telephone (both mobile and landline) were frequently used by focal points to communicate with the CORAF Secretariat and vice-versa, as well as among the country focal points and platform actors. In Mali in particular, a processor reported occasionally using the internet to reach her clients.

Knowledge and information sharing among platforms

Innovation platforms are created in different locations and at different levels, and they address different issues. The ways the different platforms exchange information and knowledge with each other depends greatly on these features. Horizontal linkages are those that connect platforms or initiatives at the same level: local, regional or national. The platforms may be in the same location or in different places. If in the same location, in most cases, they work on different issues or commodities. Vertical linkages connect platforms at different levels. Linkages between platforms can serve different purposes (Tucker 2013).

Scaling out successful innovations National and intermediate-level platforms can help to scale out successful innovations developed at the local level. Direct linkages between local platforms can also contribute to this, but often these linkages are facilitated by higher-level platforms.

Facilitate cross-platform learning Sharing experiences across platforms encourages learning on shared issues. Issues could be related to technical issues, e.g., production or processing, organizational or institutional issues, or the innovation process itself (how to govern an innovation platform).

Influencing policy Through their representation in higher-level platforms, local-level platforms provide opportunities to local actors to influence policy and hold higher levels of government to account. Strong linkages between platforms at different levels stimulate stakeholder dialogue in policy processes. Establishing innovation platforms at more than one level is one way to stimulate this kind of coordinated action and have a greater impact.

Developing value chains Innovation platforms at different levels provide opportunities to chain actors to establish or strengthen linkages. They are important to link producers to higher-value markets, and to address quality issues or standards which can hinder or facilitate market access (Tucker 2013).

Horizontal linkages

Linkages between local platforms can be created directly, by bringing together actors from different local platforms, for example during joint meetings or exchange visits. We find examples of knowledge and information sharing between local level platforms in all six countries.

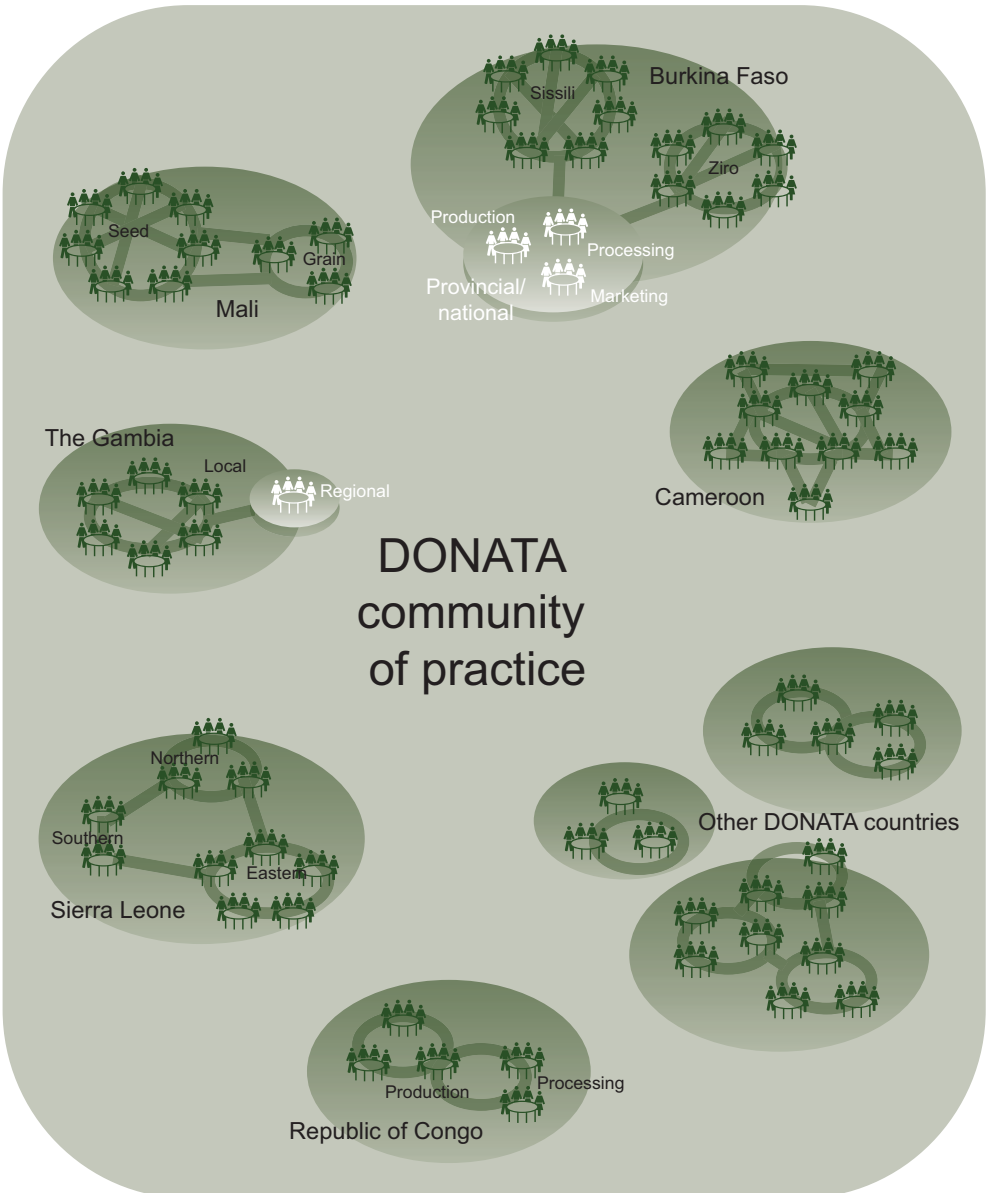

Figure 10.1 Innovation platforms in the DONATA community of practice have both horizontal and vertical linkages

Platforms at the same level in a country share directly with one another; they also exchange with regional, provincial and national platforms, as well as across countries.

The direct sharing of experiences across local level platforms in DONATA is most often focused on cross-platform learning and scaling out of successful practices from one platform to the other. At the same time it can contribute to innovation. The focus of these exchanges is often technical and addresses a shared challenge or common interest. The examples below show that exchange across local platforms can contribute to learning and innovation.

Exchange visits and joint training are among the means used in **Sierra Leone** to enhance joint learning and the sharing of knowledge and information across local platforms. In addition, regional coordination bodies provide an opportunity for regular interaction between the local platforms within each of the three regions. The bodies are made up by representatives of the local platforms who meet to discuss issues such as processing, marketing, pricing, delivery and packaging materials. Those meetings are facilitated by the Sierra Leone Agricultural Research Institute. In April 2013, the institute held a national forum where all local-level platforms were represented. The representatives discussed the platforms' progress and challenges. This was the first meeting of its kind at the national level and was seen as very useful; the research institute would like to make this forum a regular activity.

A key challenge to farmers in **Sierra Leone** was controlling grasshoppers, a serious pest in cassava fields. During a training session for the platforms in one of the country's regions, researchers suggested planting improved cassava varieties early to avoid the period when grasshoppers are a problem. But there is still a risk of grasshoppers attacking the older cassava plants. One farmer suggested collecting grasshoppers in a bag, crushing them and mixing them with water to spray on the plants; the grasshoppers soon move away, the farmer said. This idea was shared among the platforms via the regional coordination body. The researcher institute helped communicate this indigenous knowledge to the platform actors in the other regions.

In **Cameroon**, exchange and learning visits also take place. In addition, regular joint platform meetings are held at the Institute of Agricultural Research for Development in Yaoundé. Representatives from the local platforms share experiences and discuss common issues, including technical questions (e.g., selecting multiplication plots and marketing) and issues related to the functioning of the innovation platforms (e.g., financial contributions by those participating in the platform and the selection of people to multiply cuttings). The research institute provides guidance at these meetings. Such meetings are said to be costly and time-consuming, however. An important reason to share knowledge and information among the platforms relates to collective marketing of locally produced cassava products (*bâtons de manioc*). To do this on a significant scale, several platforms have joined forces.

Vertical linkages

Two of the six cases, The Gambia and Burkina Faso, have platforms at different levels. In both cases, the local platforms are important actors in the higher-level platforms. Representatives of lower-level platforms participate in meetings and

other events organized at the higher level. This is the major way of knowledge and information sharing.

In **The Gambia**, knowledge and information sharing between the local and regional platforms plays an important role in the collective marketing of maize grain and in bulk fertilizer purchases. The six local innovation platforms have been established in two districts. The regional policy platform covers seven districts, including the two with the platforms. In the other five districts, there are no established platforms in place yet. Each district has identified two representatives that participate in the meetings of the regional platform. The knowledge and information exchange between the regional and local platforms occurs primarily through these representatives. During the regional platform meetings, the representatives share production data, enabling the executive body to negotiate prices and the sale of grain. In addition, fertilizer needs are discussed, making it possible to buy in bulk. The regional gatherings also provide the local platform representatives an opportunity to exchange information with one another on the experiences and challenges of their local platforms. The interaction in the regional level has in this way contributed to direct information and knowledge sharing among the local platforms.

In **Burkina Faso**, the local platforms participate in the quarterly meetings of the provincial platforms. The higher-level platforms provide the local platforms with the opportunity to exchange information. During the rainy season, the regional platform, in collaboration with the extension services, organizes joint monitoring field visits to demonstration plots and *vitrines*. These learning events often take place at one of the local platforms, and involve other local platforms. The focus is generally on technical issues.

Cross-country learning: Turning the corner for higher performance

DONATA is being implemented in 14 countries in West and Central Africa. In all these countries, the national agricultural research institutes are trying to implement agricultural innovation systems perspectives, i.e., to start up and facilitate innovation platforms. This task is often not easy, and was new to most research organizations and researchers. Hence the need for experimentation, adaptation and learning. Cross-country learning can be facilitated by joint reflection among stakeholders in different countries. CORAF/WECARD has facilitated this process by organizing a series of events; these have proved to be crucial for the progress of the innovation platforms and the initiative as a whole.

Facing the challenges

Innovation platforms did not just happen for DONATA partners. During the first years of the initiative, the national research institutes involved faced significant challenges that hampered the establishment and development of innovation platforms. These challenges included:

- A lack of understanding and acceptance of innovation systems thinking in the region.

- The management and facilitation of the innovation platforms by co-ordinators or focal persons of projects: researchers are not necessarily facilitators.
- Poor organizational cultures vis-à-vis access to and sharing of knowledge and information.
- Emphasis on advocacy to generate buy-in and ownership in integrated agricultural research for development, instead of focusing on coaching and mentoring of platform actors and using platforms as a practical tool.

Let us start with the capacity gap: those in charge did not fully master the subject.

A main challenge in creating and facilitating innovation platforms in DONATA was weak capacity among the focal points and other researchers. Generally speaking, while the individuals were skilled researchers, they had no or very limited conceptual understanding of innovation platforms. They lacked skills and experience in facilitating multi-stakeholder processes, and were new to value-chain thinking. The innovation platform approach is new for most organizations in the region, so it has been hard for people to get their heads around the idea, and harder still for them to put the idea into practice.

The DONATA focal points are agricultural researchers with understandably little experience with multi-stakeholder processes or value chains. From the beginning of DONATA in 2007, CORAF/WECARD provided backstopping and support to capacity building of the researchers involved. But it has been a challenge to get the right people to attend learning and training workshops; such events targeted a limited number of people and tended to reach only the country focal points. The training approach was somewhat top-down, and new knowledge and skills did not automatically trickle down to other researchers or platform stakeholders. As a result, the progress expected was not realized.

Since these first attempts, DONATA has experienced several turning points along the road towards robust and successful multi-stakeholder innovation platforms. These have taken the form of cross-country learning events and training of a community of practice for key actors from different countries. This was a major shift from the training of trainers focusing on national focal points only. Three critical turning points stand out:

- A learning visit for researchers, farmers, extension workers and processors to an innovation platform in Burkina Faso in October 2010.
- A training course on multi-stakeholder processes and value chains in 2012 (also in Burkina Faso).
- A learning visit to The Gambia for researchers, farmers, extension workers and processors in 2012.

Those cross-country learning events have enabled the focal points and other stakeholders to learn about the innovation platform approach and to see how it is being applied in other countries and situations. During the first event in 2010, the focal points visited the Burkina Faso maize platforms because they were functional and included multiple stakeholders, including policymakers. This event empowered the focal points through sharing experiences and exposing them to successful examples of innovation platforms. It provided them

with practical skills in creating and facilitating platforms in value chains and food systems.

The second event was a one-week training for platform stakeholders from different countries, including research, extension, farmers, processors and media. This was organized by CORAF/WECARD and IITA in October 2012 in Ouagadougou. It focused on multi-stakeholder processes and value chain approaches. The experiential learning approach used allowed participants to reflect jointly on their experiences. The event also included visits to the platforms in Burkina Faso.

This training was followed by another learning visit but to the platforms to The Gambia in 2012. Although The Gambia was one of the second batch of DONATA countries, started only in 2011, functional innovation platforms involving diverse social and economic actors were operational within 9 months. Their participation in both the learning visit in Burkina Faso in 2010 and the training in Ouagadougou in 2012 certainly contributed to this.

However, skill gaps still exist that need to be addressed. A holistic process to enhance the capacity of platform actors is being put in place by CORAF/WECARD through the support of resource persons and service providers.

A new chain of cross-country learning events began in February 2013. CORAF/WECARD initiated the documentation of experiences to capture lessons from DONATA. This book is a result of this effort.

Cross-country learning proved very effective and contributed significantly to the successes of DONATA. The sequence of learning events provided a space for joint reflection and peer-to-peer learning among researchers and other stakeholders from different countries. Besides being exposed to concrete, successful examples, participants were able to exchange experiences and lessons, contributing to their conceptual and practical understanding of innovation platforms. In many countries this contributed to a tremendous change in the facilitation and the performance of the platforms.

The monitoring and evaluation enigma

The many reasons for monitoring and evaluation in agricultural innovation processes include accountability and operational management. But the complexity and uncertainty of agricultural innovation processes require a new dynamic, learning-oriented approach. Learning from experiences benefits the innovation process itself as well as future initiatives; such learning becomes central to monitoring and evaluation. It requires a focus on stakeholder interaction, learning and reflexivity (van Mierlo 2010). Stakeholders jointly reflect on the innovation process in its changing context, make sense of the observations and information, identify constraints and opportunities, learn from experiences, and adapt their actions accordingly. Monitoring, evaluation and learning are a built-in activity at the level of the innovation platforms, the countries and the region, building on systematic data and information collection and facilitating joint learning. They require a mix of qualitative and quantitative methods.

The monitoring, evaluation and learning in DONATA maize and cassava innovation platforms have been a major challenge. CORAF/WECARD needs

information to facilitate cross-country learning and to address common constraints and opportunities. The information needs at different levels may overlap.

Monitoring indicators The focus of monitoring and evaluation in innovation processes goes beyond checking the progress of work plans and the achievement of objectives, outputs and outcomes often captured in a logical framework (e.g., the people trained, yield increases). While the DONATA innovation platforms were conceptualized to address technological, organizational and institutional innovations with the active involvement of different stakeholders, the reality was different. The platforms were initially created around a technological issue such as farmer access to improved maize and cassava varieties in combination with cultural practices. Consequently, the information and data gathered focus on **technical innovations** such as changes in yield and production as a result of the technology or best-bet practice, and on the number of beneficiaries disaggregated by gender. No explicit effort was made to understand gender roles and access to resources among the innovation platform actors, to name a few issues. **Process innovations** such as new relationships, trust and confidence, new entrepreneurs and businesses generated by innovation platforms through stakeholder interaction, for example, could not be systematically captured. Worse still, the platforms could not document stories of successes or failures, despite facilitating a number of participatory monitoring and learning events.

Hence the need for an explicit monitoring and evaluation focus on complex systems dynamics and interdependencies, and to track emergent dynamics, the provision of feedback, learning and supporting action in the innovation process. More qualitative monitoring and evaluation methods are required to reflect on these aspects. An example is the septagrams (Chapter 6) that help stakeholders to make explicit the level of influence of the different stakeholders in a platform, and to assess this influence. Joint stakeholder reflection opens up the possibility to address imbalances, if necessary.

For the more technical aspects of innovation processes that are simple in nature, it is good enough to work mainly with fixed indicators, and monitoring and evaluation can be done more or less routinely by programme staff or with the help of external experts. For example, those platforms formed to address a technical entry point, an obvious indicator would be the adoption of new varieties by smallholder farmers. Systematic data collection, storage and analysis are required to inform stakeholders and project management.

In writing this book, a number of indicators were suggested for which the national research institutes collected information. But there were challenges in collecting and interpreting the data. To make cross-country comparison possible, the indicators and unit of analysis should be similar. For example, for DONATA it was important to know the number of beneficiaries in each country. However, in some countries the individuals involved in the platforms were considered as beneficiaries, while in other countries, the households were counted. This shows the importance of standardized, uniform indicators for different countries for activities they have in common.

Innovation platforms' activities change over time: new issues are taken up and translated into concrete actions. This implies a need to also change the focus

of monitoring and evaluation and to identify new indicators. For example, in **Sierra Leone**, the platforms started by addressing access to improved varieties. But in the meantime, they have taken up processing and marketing. Thus, new indicators are required. In some cases, existing indicators may no longer be relevant and could be dropped. It is likely that as it evolves, each platform will develop a unique set of indicators to suit its activities. Nevertheless, it remains important to create uniformity across platforms where possible.

Attribution of results Another major challenge in monitoring and evaluation is related to attribution: what results can be attributed to the innovation platform? Can an increase in yield be attributed to the introduction of a new variety only, or are other factors at play? Are increases in income a result of increased productivity only, resulting from the new variety, or have farmers expanded their area, have they increased their use of fertilizers, or have prices increased? To be able to give meaning to a certain indicator, more information is required. The more factors are at play, the more complex it will be to attribute the results to the intervention, and the higher is the need for mixed monitoring and evaluation methods and joint reflection to give meaning to the information. Sometimes it is not possible to attribute progress definitively to the intervention.

The monitoring and evaluation of the DONATA platforms were supposed to be systematically integrated at the start of the initiative, with support of a third party. But it was only recently (February 2013) that CORAF/WECARD co-hosted a learning workshop with FARA and the Natural Resources Institute of the University of Greenwich (NRI) to internalize a monitoring and evaluation tool developed with actors in all three DONATA sub-regional organizations. The data and information are being analysed by NRI. Hopefully, both product and process innovations emerging from the maize and cassava innovation platforms will be documented.

The budget allocated for monitoring and evaluation was inadequate, and NRI was not able to cover effectively all three sub-regions where DONATA operates. It therefore relied on CORAF/WECARD's own monitoring and evaluation units. Within CORAF/WECARD, the Knowledge Management and Capacity Strengthening Programme facilitated systematic information and data collection for NRI to analyse and report on. This did not work out well because there was no funding for monitoring and evaluation within CORAF/WECARD either. Although the platforms did allocate modest funds, these were used for participatory monitoring and learning and not systematic data and information collection. Consequently, both systematic information and data collection and the documentation of changes remain weak. And because the innovation platform actors have not been able to systematically collect relevant information and data, NRI has been unable to report on it.

Systematic monitoring and evaluation are further complicated by the absence of:

- Functional monitoring and evaluation systems within the national agricultural research organizations.
- Adequate skills among the actors operating at community level within the innovation platforms.

Therefore CORAF/WECARD is putting a holistic process into place to enhance capacity of the platform actors, with the support of resource persons and service providers. Multi-stakeholder processes and value chain approaches are the two key pillars that inform the creation and facilitation of functional innovation platforms.

In conclusion, the monitoring and evaluation of the platforms in the 14 DONATA countries was constrained by:

- Requisite skills in monitoring and evaluation at the level of the national agricultural research organizations.
- No person (or group) was given the responsibility of carrying out systematic information and data collection.
- No budget was allocated to monitoring and evaluation within CORAF/WECARD.
- The overall project (Promotion of Science and Technology for Agricultural development in Africa) allocated insufficient funds for monitoring and evaluation.

Conclusions

The success of an innovation platform rests partly on its ability of the people involved to interact with its external environment. Knowledge and information sharing with external stakeholders comes in different shapes and sizes and is shared through various means, for different purposes: it can contribute to out-scaling of certain new practices, to facilitate joint learning beyond the boundaries of the platform, to promote products, and to gain policy support. Platforms often use a mix of strategies and combine different objectives. For example, field days and radio are both used to inform other farmers, to promote products, and to convince policymakers of the need for policy support to the platforms.

At the local level, the focus is mostly on the provision of practical information on new agricultural practices for out-scaling purposes. Across the six countries, the platforms use similar, often traditional, extension methods for sharing knowledge and information, including field days and demonstrations. These events target non-participants, but may also include actors from other platforms. They often focus on other stakeholders to gain policy support or to influence policymaking processes. Direct meetings, where platform representatives meet with policymakers, are the most common way to do this.

Higher-level platforms deal with issues where economies of scale are important and higher-level actors are more involved. Regional and provincial platform meetings provide a bottom-up communication channel that facilitates the emergence of critical issues and opportunities that need policy attention. Policymakers have realized this and seek interaction with these platforms. The issues taken up by these platforms include market access, bulking, marketing, policy changes (e.g., on input subsidies, tax issues) and negotiations. At the same time, the higher-level platforms provide a space for the local platforms to exchange experiences and information and mutual learning, leading to sus-

tained relations among local platforms, groups and individuals. Higher-level platforms can thus be crucial mechanisms to achieve scale.

Although the Regional Agricultural Information and Learning Systems (RAILS) and DONATA are the key components of the PSTAD project, these did not systematically and consistently engage in the innovation platform process. Hence the use of the RAILS portal at country and regional levels to enhance the visibility of DONATA products and emergent properties remains poor.

Monitoring and evaluation, building on systematic data and information collection and facilitating joint learning, are crucial for effective agricultural innovation. Their focus goes beyond the technological innovations; it also needs to address organizational and institutional aspects such as relationships, trust and confidence, new entrepreneurs, and business. This requires coordinated efforts on the regional level, while providing flexibility to the evolving character of the country programmes and individual platforms. DONATA has faced major challenges in organizing monitoring and evaluation, which resulted in a lack of systematic data collection and hampered analysis and co-learning.

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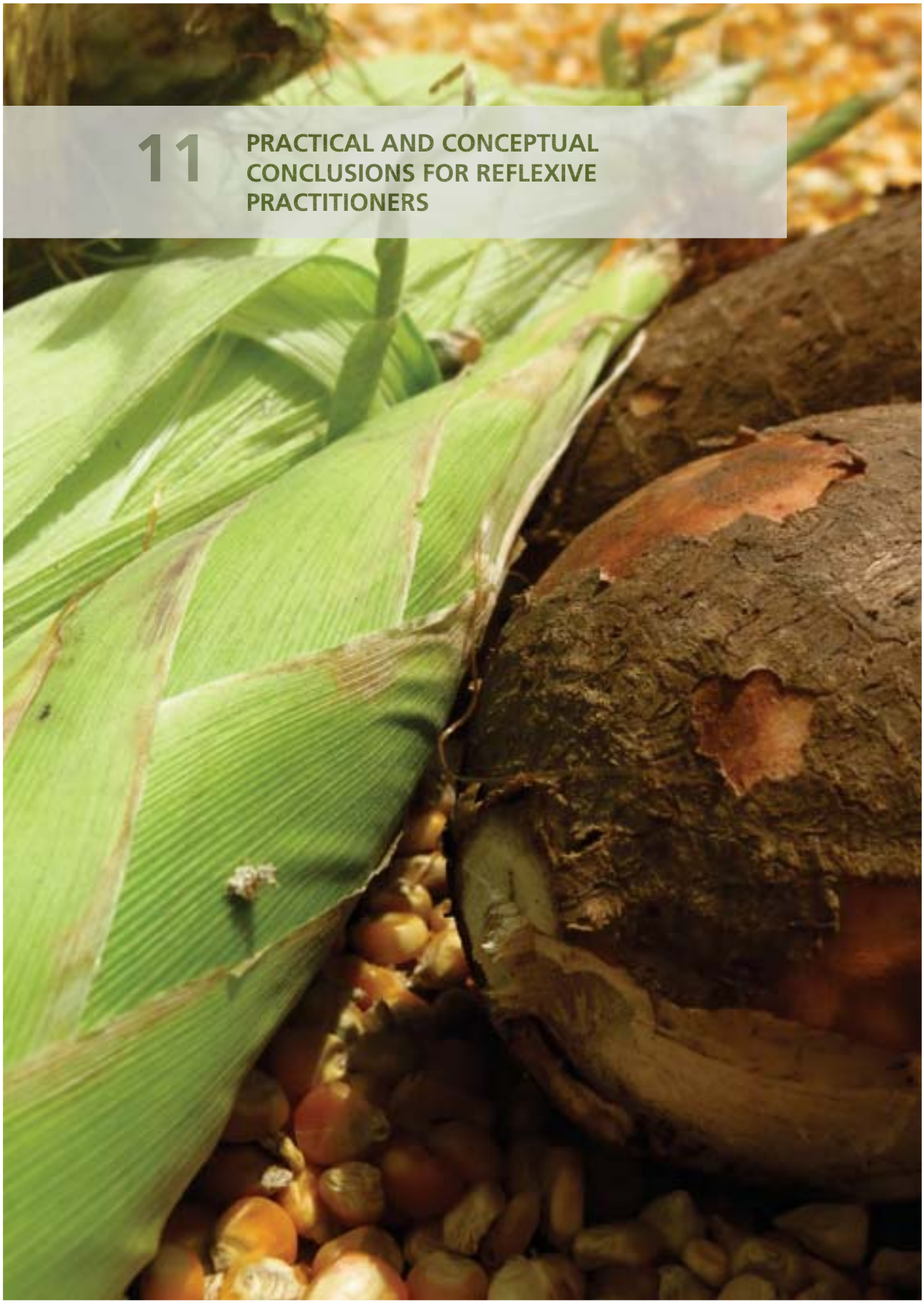
11 PRACTICAL AND CONCEPTUAL CONCLUSIONS FOR REFLEXIVE PRACTITIONERS



Previous page: Maize and cassava from the market in Serrekunda, The Gambia.

Photo: Geneviève Audet-Bélanger

11 PRACTICAL AND CONCEPTUAL CONCLUSIONS FOR REFLEXIVE PRACTITIONERS

Rhiannon Pyburn and Remco Mur

The reflections and insights in this concluding chapter are meant to provide food for thought for the reflexive practitioner: the professional putting theories and ideas into action in the field. The reflexive practitioners we are referring to may be extension workers, researchers, policymakers or other innovation platform actors who seek to make a difference in African agricultural development (Box 11.1). This book has covered a surprising amount of ground, drawing inspiration and evidence from the experiences of six national research systems in West and Central Africa with maize and cassava innovation platforms. Where does all this leave us? We began with some guiding concepts and some pressing themes derived largely from the practice of implementing innovation platforms, as well as from conceptual work done by social scientists and action-researchers. Now we return to the concepts introduced in Chapter 2 to see what we have learned on this journey against the grain and to the roots.

The conclusions are clustered into two sections. First, using a conceptual and practical lens, we draw out learning in the form of reflections and recommendations for future projects on innovation platforms in Africa. The second section takes a higher-level perspective on innovation platforms, and brings to the surface some exciting conceptual implications drawn from the DONATA experiences. We offer some "aha!" insights into how innovation platforms are being approached vis-à-vis food security and commercial objectives. We look at key concepts for analysing innovation platforms – namely structure and agency, resilience, and emergent properties – and how they relate to the themes and cases in the book. We flesh out and polish up these conceptual touchstones to guide practice and further conceptual exploration. We then round off with some final thoughts.

Box 11.1 Reflexivity

In sociology, reflexivity refers to an act of self-reference (Woolgar 1988). It refers to the capacity of an agent (an individual or an organization) to be conscious of the social and societal forces at play, and to alter their place in that social structure (context).The practitioner is aware of his/her social position and influence on the context in which he engages and likewise, on the context's influence on him. Van Mierlo and Reeger (2010) refer to reflexivity as "the ability to affect and interact with the environment within which an innovation system operates". A **reflexive** practitioner is thus more than a **reflective** practitioner (Schön 1983) who reflects on his/her own practice and learns from it. **Reflexive** practitioners adapt to changes in the context and respond consciously. There is an ongoing iterative "conversation" between the agent and the context.

Reflections for innovation platform projects in Africa

Box 11.2 Reflections and recommendations

Reflections

- Technology dissemination as a starting point: pitfall or gateway?
- Research institutes in innovation platforms: initiators, facilitators, actors
- Is innovation a public good?

Recommendations

- Embed learning in your approach
- Consider institutional innovations, not just technology
- Get gender on the agenda!

Conclusions on the three process-related issues (start-up, facilitating stakeholder interaction and sustainability) as well as the three cutting-edge issues (policy pathways, gender and inclusion in agricultural innovation systems, and knowledge and information sharing) can be found within the respective thematic chapters. However, when we take these conclusions collectively and consider the conceptual questions guiding the thinking in the book, three higher-level reflections come to the surface, as well as three strong recommendations for future innovation platform projects in Africa (Box 11.2). Each will be tackled in the paragraphs that follow.

Technology dissemination as a starting point: Pitfall or gateway?

A one-way researcher-to-farmer flow of knowledge and technology is conceptually stunted and overlooks the massive intelligence and knowledge held by other actors, and the perspectives that these alternate standpoints offer. Thinking related to agricultural extension and the role of researchers, farmers and advisory services in this sector has shifted (see Chapter 1). Innovation systems thinking cracked open the linear models and re-conceptualized agricultural sectors as living systems with multiple and diverse actors who all have interests, stakes and knowledge that are valuable – nay, essential – to the good functioning of the system as a whole. Innovation happens when these various stakeholders come together to address a problem or an issue and find a way forward that is acceptable for all. An innovation platform is the place where the stakeholders come together, and a facilitated process allows them to engage and learn as a collective. That's the idea, anyway.

The innovation platform concept appeals to many organizations – governmental extension services, national and international research organizations and those working for sector reform. However, this does not necessarily mean that the foundations on which an innovation platform is based have also been digested. In many cases, stakeholders are brought together in an apparent innovation platform, but in fact the purpose of the group being brought together is old-style transfer of technology, with a twist. Lyman (2012:268) puts it like this:

> *Approaches in technological innovation within an agricultural innovation system often take the form of project-based innovation platforms… which usually operate for a limited*

time; and unsurprisingly they tend to focus on quick solutions to technical problems identified within the platform.

This is a very common pitfall. We also see the term "innovation platform" being used to describe groups of stakeholders who are almost all farmers. What would otherwise be called a farmers' group gets the label of "innovation platform". When this happens the essence is missed – the **multi-**stakeholder composition and joint, multi-directional learning.

This begs the question: can an "innovation platform" that begins with just one group of stakeholders, or with a technology push, focus evolve into a real innovation platform? This is an important and relevant question because so many innovation platforms are being set up for the technology-push purpose by research organizations. When the entry point is a specific technology push or research dissemination, can emergent properties arise that transform the platform towards a place of active multi-stakeholder interaction, mutual learning and multi-directional knowledge flows? The DONATA cases explored in this book offered an excellent empirical basis for examining whether it is enough to bring stakeholders together: will the process right itself and evolve over time into a real innovation platform? We approach this with a learning mindset; evaluating the initiative was not the purpose of this book. With DONATA partners we explored what happens when research organizations take up the task of facilitating an innovation platform initially set up to get a technology into use.

DONATA began, as many organizations and projects do, with the idea of using innovation platforms for technology dissemination. Hence the term used internally, "innovation platforms **for technology adoption**" (see Chapter 1). The specific entry points varied from one country to another, but for the most part they had a technology push focus: a new variety, a new tool or a new way of processing. The idea was that the innovation platforms would promote the technology so that it would reach more farmers. They followed the logic that has long dominated the research–rural extension dynamic, which began with the still widely used transfer-of-technology model. Remarkably, the limits of this instrumental approach, the technology dissemination focus that framed the start of the initiative, are now quite clear to the research institute partners. The value of the stakeholder interaction generated within the platform and its **emergent properties** are becoming apparent and explicitly acknowledged (see the final section of this chapter for more on emergent properties).

So does the starting point matter? Initial investments of the DONATA funds were used, for example, for equipment, seeds, varieties and food-for-work. These incentives related to the concrete entry points of each innovation platform and were intended to help get the initiative moving. They were neither long-term financial channels nor ongoing project costs. Instead these initial investments were used as a motivation to build interest among relevant actors. The cases in this book demonstrate that innovation platforms and stakeholder interaction have very steep learning curves. After varying lengths of time (1–6 years) the initiating organizations and other platform actors have resilient, multi-stakeholder processes in place – some more robust than others. A resounding insight is that bringing people together is indeed enough of a start. A full conceptual understanding or a broad techno-institutional entry point is

not a pre-condition for start-up. Find an entry point, tickle the interest of the actors involved, then let the interaction begin. Learning events over time can reshape the innovation platform so that it develops into a robust and effective mechanism for change, beyond the initial entry point. This reshaping includes expanding the composition to include actors other than farmers, research and extension.

This is an exciting and revolutionary conclusion as it offers much hope and inspiration as well as trust in the process of bringing people together in a concerted manner and that this will in time lead to innovation. Learning and techno-institutional innovations can be seen as an **emergent property** of stakeholder interaction and budding innovation platforms, even where the starting point is quite limited. But, this does depend on learning-on-the-go: that innovation platform actors learn together about not only the technical or institutional issue at hand, but also about framework in which they are operating and the assumptions underlying their approach, and even learning about how to learn together better: so-called "double loop" and "triple loop" learning respectively (Argyris & Schön 1978 and 1996, Senge 1990, Bateson 1972). That practitioners become more reflective and conscious of their influence on, and being influenced by, the context in which they work and live is an added value from participation in an innovation platform. It means that we do not need to become vigilant or overly specific in what we refer to as an innovation platform. DONATA has demonstrated that bringing stakeholders together may be enough of a starting point, as long as learning is embedded in the process and infusions generating a broader conceptual understanding are a regular part of the trajectory. Technology dissemination can indeed be a gateway to full-fledged innovation dynamics.

Research institutes in innovation platforms: Initiators, facilitators, actors

In all cases, the national agricultural research institutes were the initiators of the DONATA innovation platforms. This had implications for the kind of entry point chosen (for the most part technological, a crop variety), the composition of the innovation platform, facilitation and the nature of the discussions and activities that the innovation platforms undertook. However, the initiating organization was not a point of discussion; it was a given. This is because CORAF/WECARD's point of contact for the national agricultural research systems in each country is its national agricultural research institute. By contrast, facilitation was open for discussion and various strategies were pursued by the research institute initiators across the 14 countries involved in the initiative.

Lots of options exist in terms of how to facilitate an innovation platform, the facilitation roles that may be required, and who should do it. These are recounted in the various cases in the book. In **Mali** researchers remained the facilitators throughout the project cycle: there were a small number of stakeholder categories involved in the platforms. Likewise in the **Republic of Congo**, only researchers, extension services and farmers were involved for the most part, and the facilitation was done by the research institute. The risk of research institutes facilitating the platforms is that a transfer-of-technology

mentality may well prevail and the composition may remain limited to the "usual suspects": research, extension services and farmers. However this is not a *fait accompli* as we saw in Mali, where despite researchers being the facilitators of the platforms, they managed to address institutional aspects of the maize seed system. Trust and relations between the seed producers, seed companies and grain producers were enhanced.

In other cases, the national agricultural research institute staff involved were already acting as extension workers (e.g., in **Sierra Leone**). The national agricultural research institute there had an extension arm that could easily be harnessed for playing this role. But research institutes do not necessarily have skilled facilitators on staff. Some focal points – **The Gambia, Cameroon** – recognized that researchers are not by definition good facilitators of multi-stakeholder processes. They chose to work instead with extension services or non-governmental organizations in the region in order to find the best-placed people to act in the innovation broker role (Klerkx & Leeuwis 2008). This wise choice allowed research institutes to focus on testing and adapting good varieties and new technologies, and left process management to other actors. In both of these cases, it may still be too early to see the impact of this choice.

In **Burkina Faso** and **The Gambia**, facilitation was spread out among different organizations – farmers' organizations, research, non-governmental organizations and so on. These two countries also show the most evidence of institutional change, for example changes in contracting and policy influence. This raises the question: if facilitation is delegated to another actor, is institutional innovation more likely? With research institutes initiating and facilitating an innovation platform, the technological innovations are likely to stay central. This makes sense as varietal testing and adaptation and other technological innovations are at the heart of what the researchers do. Other actors may be more amenable or sensitive to opportunities for institutional innovations. We come back to institutional innovation later in this concluding chapter, but this provides some intriguing food for thought.

An important insight from the analysis is the criteria for choosing who does what and when in facilitation:

- **Availability** The presence of potential organizations in the region beyond just the research institute who could play the role of platform facilitator.
- **Acceptability** Neutrality (no commercial interest), credibility (knowing the sector) and authority (respect from other actors) are key to a facilitator being accepted in that role.
- **Competence** The facilitator must be talented and informed as to value chain development, multi-stakeholder processes, conflict management, lobby and advocacy as well as action-research (Nederlof et al. 2011). This often means collaboration among different organizations to share facilitation roles so that all are covered.
- **Level** The level at which an innovation platform is operating influences the choice as to which organization should facilitate. Different organizations are better positioned to engage at different levels (e.g., local vs. national policy).

Research institutes (or other initiators of an innovation platform) need to develop a conscious strategy for facilitation which takes into account these criteria.

An interesting phenomenon is that most of the research institutes are easing out of the lead roles in the innovation platforms and reverting to their main role as researchers. However, the experience of participating in the initiative is allowing them to resume research work with a more nuanced, more participatory approach to providing more relevant technologies and research outputs to actors in the system. They are able to do research better, with a firmer understanding of farmers' needs, and with stronger networks throughout the value chains that their research supports. Their organizational capacity to innovate has flourished remarkably over the course of the initiative. The benefit to the research institutes is the pronounced shift from only transfer-of-technology to a better understanding of farmers' needs. They are thus better able to shape technological developments to make them more relevant for users. A more systemic approach has been embraced that links farmers to markets and engages many more actors than the typical farmer-extension-research trio. This is markedly sustainable.

Doing research differently means building in feedback loops to get reactions and experiences from farmers. Feedback suggests farmer experimentation by farmers and other stakeholders that may cover agronomic practices (e.g., trying out new varieties) or new organizational arrangements or institutional change. This experimentation and the feedback loops are critical to an innovation approach and remain a challenge. In our cases we did not observe much experimentation, but complex problems do require trying out multiple potential solutions in order to find a suitable way forward. Snowden (2007) refers to these kinds of experiments as "safe-fail" (Box 11.3): there is no harm in them failing as the initial experiments are small-scale and low-cost. Experimentation needs to be embraced more rigorously in the changed ways of working of the research institutes.

Are the platforms (or the innovation capacity) more sustainable because they were started by research institutes? We do not have comparative evidence on this as all of the initiating partners were research institutes. However, it is interesting to note that none of the institutes had yet articulated an exit strategy only 6 months before the initiative was due to end. This could be seen as a fatal oversight. But instead, we argue that it is because the research institutes are national players in the agricultural innovation system who will continue

Box 11.3 "Safe-fail" experiments

Safe-fail probes are small-scale experiments that approach issues from different angles, in small and safe-to-fail ways, the intent of which is to approach issues in small, contained ways to allow emergent possibilities to become more visible. The emphasis, then, is not on ensuring success or avoiding failure, but in allowing ideas that are not useful to fail in small, contained and tolerable ways. The ideas that do produce observable benefits can then be adopted and amplified when the complex system has shown the appropriate response to its stimulus.

Extract from the Cognitive Edge website. See more at http://tinyurl.com/qct3mkc

to work in the sectors where the innovation platforms have been set up, either as platform actors themselves or in supporting other platform actors.

Is innovation a public good?

Often public funding is used to kick-start innovation platforms: in DONATA, they were internationally funded. But this seed funding eventually dries up, demanding creative arrangements for post-project survival. Much of the sustainability efforts of the DONATA partners have focused on institutions, creating space for innovation platforms at the national policy level. This begs the question: is innovation a public good? Innovation – technical, organizational and institutional change – can be argued to be a broad benefit to a sector or part of society: thus it is a public good in and of itself. If it is indeed a public good, then this lobbying for national policy is very relevant and strategic, as well as being a means to secure further resources for innovation platform initiatives.

A more nuanced question may be, what aspects of innovation are public goods? When we seek to integrate more vulnerable or marginalized populations into a sector, for example in post-conflict regions, there are often additional costs involved. A case in point was an innovation platform in **Sierra Leone**, where blind people, polio survivors, amputees and other vulnerable groups are actively integrated as platform actors. Creating and providing meaningful work for more vulnerable groups is a valuable contribution to society: a public good. When innovation platforms are springboards for social efforts, the costs may not be covered by market forces alone. We know that less advantaged groups are less likely to be able to pay for services (World Bank 2012: 258). This is where national governments and international NGOs may have a role to play in financing participation, training and capacity development of these more vulnerable groups. Ideally, in time, the contributions of these people will become self-sustaining: that is to say, something that the market can manage without external funding. But where innovation platforms are being used to meet social objectives to the benefit of the society at large, government funding support is logical.

We need to think wisely as to the role of public institutions such as research institutes or ministries of agriculture in supporting innovation processes. The Comprehensive African Agriculture Development Programme (CAADP) Pillar IV supports the strengthening of a facilitation role for the public sector (Futures Agriculture 2011). We know that innovation platforms can be more effectively facilitated by NGOs or by a constellation of different actors, depending on the kind of facilitation required at a given moment. The parameters of public support and the role that public institutions can play in stimulating innovation are important reflection points. Are conducive policies enough? Who should bear the cost of bringing stakeholders together within a sector or value chain to learn and grow the sector? Who should facilitate this process? Coordinated public-private sector ownership and resourcing is ideal, especially where social objectives (like the inclusion of vulnerable groups or gender equity) sit alongside technological "push" objectives. That is to say, if the CAADP statement is to ring true: "agricultural innovation systems create opportunities for

famers to innovate rather than delivering ready-made technologies" (Futures Agriculture 2011).

In the conclusions to Chapter 7, we raise a broad issue that covers several aspects of sustainability: "how to connect and incentivize a complex system to innovate across the entire value chain with the end user in mind"? (Meridian Institute 2013:11). This is in part about sustaining the **institutional** capacity to innovate. But there is more to it than that. How can innovation be incentivized? What kinds of incentives are required? And how might they differ from one actor group to another? And who provides the incentives? These are critical questions that touch on individual, organizational and institutional capacity to innovate as incentives vary from one level to another. For example, farmers may be incentivized by the promise of better market access, or transporters by more in-time delivery of harvests. An NGO may be motivated by better participation of vulnerable groups. At the national level, politicians may be incentivized by food security objectives being met. The question of how to incentivize the whole chain resonates for us as it touches on complexity, value chains, agricultural innovation systems, multi-stakeholder processes and learning, among other concepts that are integral to how we have framed this book (see Chapter 2). A response lies in part with the interplay of structure and agency (discussed later in this chapter). This dance becomes visible in some of the cases related to sustainability and policy. It links further to the question of innovation as a public good as we consider who provides the incentives.

Embed learning in your approach

Agricultural innovation systems are complex with many actors involved. As innovation systems are meant to be multi-stakeholder processes, the value of a **learning approach** cannot be overstated. In DONATA, a very valuable aspect of the learning approach was the cross-pollination in thinking across the national research partners involved. Three key means for sharing experiences within the initiative were:

- **Focal point communications** Focal points sharing information, documents and attending meetings together was useful, but that was not the tipping point. The tipping point for grasping a new understanding of innovation platforms for most countries was what they refer to as "Ouaga 1": the training in Ouagadougou in 2012 when the implementers of the innovation platforms came together.
- **Cross-country learning** This was realized through learning visits in other countries (in Burkina Faso and The Gambia); the pre-writeshop for this book with all 14 country representatives in Burkina Faso, and the writeshop for preparing this book with six country representatives in The Gambia, among other events.
- **Data collection and management** This is a recognized shortcoming of the initiative. For future innovation platform projects in the region, the message is: **get it right from the start!** Collecting and managing data from different actors in different innovation platforms across a country is a massive challenge. The question remains of how to gather

data at the innovation platform level and how to make it relevant for local actors so that they are more likely to collect it. If this is done well, it is however, as potential source of learning for the research institutes and across countries.

From the outset, CORAF/WECARD faced a political imperative to work in the 14 DONATA countries simultaneously. It made a wise decision to do this in two phases as the cost of starting all at once would have been immense, and more importantly, the initiative would suffer from not having had any models to learn from. For phase-2 countries (e.g., The Gambia or Cameroon after its restart), models were already in place (in Burkina Faso, the Republic of Congo, Mali and Sierra Leone). The mistakes and successes from the other countries provided a rich source of learning and reflection that improved the phase-2 countries' emerging platforms. DONATA's experiences show that **cross-country learning** played a critical role in the progress of the initiative: joint reflection among country teams during field visits and training workshops allowed for peer-to-peer learning among researchers and other stakeholders.

Consider institutional innovations, not just technology

DONATA and indeed many, if not most, approaches to innovation platforms, have focused on the dissemination of technical innovations, getting varieties and other technologies off the shelf and into farming practice. Indeed, the minister interviewed in Burkina Faso, who is boldly taking up innovation platforms as a policy imperative, also echoed this sentiment. But there is much more potential than this: innovation platforms can stimulate and contribute to societal and sectoral change.

For the most part, experts on innovation systems agree that technological constraints are not the central issue; rather it is a capacity gap that limits the smallholder adoption of new technologies as well as the need for institutional change within research organizations to shift mindsets towards more farmer-centric innovation and incentives to support this (Meridian Institute 2013:8).

> *The success of programmes that support innovation lies in the ability to stimulate institutional change and to learn lessons about how such changes can be stimulated and supported. The logic behind this is that innovation concerns changing a cluster of habits, practices, rules, norms, routines and policies – i.e. institutions – that govern the effectiveness and direction of a wide range of processes associated with the way information and technology is demanded, created.*
>
> *– Adwera, in Mur & Wongchowski (2013)*

While we saw some evidence of institutional change in relation to policies and policy influence within the cases in this book, institutional innovations have tended to be more ad-hoc than intentional. CORAF/WECARD recognizes the importance of institutional innovation alongside technological innovation. In part it refers to this as **process versus product innovations**. However, time did not allow for a widespread internalization of these perhaps more abstract

concepts within the timeframe of the initiative. Next steps might aim to embed institutional change from the start, even as entry points for the innovation platforms.

Some lessons can be drawn from the "Convergence of Science–Strengthening Innovation Systems" programme, which involves universities in Benin, Ghana and Mali as well as Wageningen University in the Netherlands. Nederlof and Pyburn (2012) explore the facilitation of institutional innovation and describe how the researchers navigated these uncharted waters. This project found that it is possible to **experiment with institutional conditions** and that this is a way to remove smallholders' constraints and stretch their windows of opportunity (CoS-SIS 2013). The second phase of the CoS-SIS programme underlined the importance of **diagnostic studies** to assess institutional and socio-technical constraints and opportunities as well as **social differentiation among actors**, i.e., the different categories of small farmers related to gender, age, social standing and so on (CoS-SIS 2013). Another interesting lesson is that innovation platforms – as opposed to only the researchers – can uncover unexpected but highly relevant subjects for institutional innovation. For example, in the cocoa sector in Ghana, the innovation platform experimented with differential payments to farmers depending on cocoa bean quality. This demonstrated the value of multi-stakeholder input into research or experimentation, including institutional innovations (CoS-SIS 2013).

Get gender on the agenda

Gender is a longstanding weakness in agricultural innovation systems discourse and practice. It is only in recent years that it has started to get some much-needed attention. In fact, while this book was in preparation (autumn 2013), a special issue of the *Journal of Agricultural Education and Extension* came out, which specifically focused on gender inequality in agricultural extension. It is high time that this issue be taken up with rigour and experimented with by practitioners more broadly. Chapter 9 provides a framework for addressing diversity, inclusion and gender within agricultural innovation systems. It links initiatives in the research institutes to address gender internally and within the innovation platforms.

CORAF/WECARD and its partners in DONATA recognize that gender and inclusion were overlooked within the innovation platforms and their own work. Next efforts need to embrace gender and inclusion and reap the benefits. Meinzen-Dick et al. (2011:1) are explicit as to the instrumental, impact-related argument for addressing gender in research, development and extension: "paying attention to gender is not a matter of ideology but rather a matter of development effectiveness: incorporating gender issues more widely and systematically in agricultural research, development and extension systems will contribute significantly to meeting the food needs of the future population or ensuring that productivity translates into the improved welfare for the poor".

We saw in the **Sierra Leone** case some beautiful examples of the impact of inclusion both on the functioning of the platform and the economic success of the actors involved, as well as in terms of broader social change and societal

relevance. Broadening definitions of who is a farmer, and looking at the gender dynamics and dimensions between and among different categories of innovation platform actors, open up a world of possibility for institutional innovation, contributions to agriculture, and positive social change.

Beuchelt & Badstue (2013:710) articulate the need for clear and explicit objectives for agricultural research: is it about economic development, human development or environmental sustainability? Agricultural or economic development can lead to income generation, but this is a means to support human development, rather than an objective in its own right. Increased income or yields are not the objective of development but rather it is about the "expansion of possibilities in life" (Beuchelt & Badstue 2013:710). We agree with their conclusion that this is an essential distinction when it comes to agricultural technology development from a gender and social perspective. Innovation for agricultural development that starts from this foundation is open to institutional as well as technological opportunities for expanding the possibilities in life of the various actors involved.

Getting gender on the agenda is not only about involving women farmers in production or ensuring that they have a voice in innovation platform decision-making – though these issues are also important. It also means re-thinking and re-structuring agricultural innovation systems to ensure that they are not only oriented towards the most powerful or the "loudest" actors. It means looking at the organizations involved, the incentives for different actors to participate, and the constraints – social, cultural, regulatory – to their participation. It requires a re-jigging of the research, extension and educational bodies to create space for different categories of women and men to engage in agricultural development. It is an exciting time for change and transformation! And as we saw in the Sierra Leone example of inclusion of blind people, polio survivors, and amputees – it is not just a pipedream, but very possible to realize with some creativity, motivation and perseverance.

Re-conceptualizing innovation platforms

Here we return to the conceptual framework (Chapter 2) with some excitement as to what the DONATA innovation platforms have exposed. Three conceptual touchstones are the focus of this section:

- **Structure and agency** These are useful for framing and understanding the changes and evolution of the innovation platforms. They are also helpful in analysing the kinds of changes that occur: whether the change is related to actor capacities, knowledge, confidence, skills and decision-making power (**agency**); or to the rules, norms, customs, laws, regulations and behaviours that set the parameters for what action is possible by which actors (**structure**).

- **Emergent properties** It is exciting to consider the unexpected surprises that develop when people are brought together in an innovation platform. This is a good argument for trusting the learning process and having faith in human ingenuity.

- **Resilient institutions** An important objective of an agricultural development initiative is resilience – the ability to respond, adapt and bounce back in a changing context. Innovation platforms can both be resilient institutions in and of themselves, as well as be the place where resilient institutions are negotiated and conceptualized.

Structure and agency

Structure and agency (introduced in Chapter 2) have been exceedingly useful in analysing the cases for the thematic discussions found in this book. We discuss some of the ways in which they relate to the subjects covered below.

Related to facilitating stakeholder interaction Stakeholder interaction benefits platform actors by improving relationships among the various stakeholders, thus strengthening the resilience of the value chain or sub-sector. Better relationships among value chain actors improves individual businesses as well as communication and value chain arrangements (i.e., how different value chain actors work together). These both can be understood through the concept of **structure**. The changing relationships open up new avenues for engagement and allow different actors to influence change. The new possibilities for engagement – whether they be rules or habits or norms – are structural changes.

Whereas new "rules of the game" refer to structural change, the motivation and capacities to act differently or engage with different actors is linked to agency. When we explored the relative influence of different actor groups using septagrams (Chapter 6), we saw that one actor group, in particular – farmers – who are generally seen as more marginalized actors, were recognized as highly influential within the innovation platforms. This suggests that the structural shifts created by the innovation platforms allowed the more marginal actors to increase their influence over the value chain. However, it takes more than just new rules or space to get these more marginalized actors to act. This demands that they – the farmers – feel motivated and capable, and think they will be listened to. This is **agency**.

Related to start-up and inclusion The choice for production technologies as entry points put farmers in the centre and in terms of influence within the innovation platforms. If the farmers did not grow the cassava or maize, then the other actors were left unable to play their roles within the chain. Entry points have a big impact on the relative influence of different actors within the platform. They also influence how resources are allocated within the platform – like training for a specific technology or technique. Beyond the technology, resource allocations can also be linked to farmer organization so that farmers are better able to learn together. All of this relates to building up farmer agency.

Related to sustainability The conclusions in Chapter 7 go into detail on the components and considerations related to each category of sustainability with regard to innovation platforms. We argued that incentives, resources, leadership and relationships are all necessary to sustain a platform. Each aspect was fleshed out, based on the experiences. Further we looked at capacity to innovate of **individuals** involved in the innovation platforms and of **organizations**. Sustaining the capacity to innovate through the chain or throughout the

agricultural innovation system at national level is about **institutional** capacity to innovate and is taken up in Chapter 8. Here we want to bring a few key titbits to the surface for deeper reflection and to make some conceptual connections.

We distinguish three categories of sustainability to consider in innovation platforms: sustainability of the **changes** that happen through the platform; sustainability of the **platform itself** as an entity; and sustainability of the **capacity to innovate** among the actors participating in the platform. These distinctions in themselves are important to bear in mind, as sustainability is a term often tossed about without clarity as to what specifically needs to be sustained. Most innovation platforms in this book have a technical (e.g., a new crop variety), production or processing entry point. But once the new variety has been taken up or the new practice disseminated, what then? If the group is still together and has built the capacity to innovate, then it can turn to another issue (such as marketing); all this is within the project support framework. The sustainability question is whether this will happen without financial support.

The two levels of sustainability explored in this book – sustainability of the innovation platform and of the capacity to innovate – express quite different sociological concepts. The sustainability of the platform itself speaks to the importance and value of **structure** – of having institutions, ways of operating both formally and informally – that support innovation and give it a framework in which it can unfold. On the other side, sustaining innovation capacity reflects **agency** – the importance of agents (individuals or organizations) being empowered and capable to act and make changes to improve their existence. Structure and agency play off one another, and both are important aspects of change. The question remains if and whether an innovation platform is the structure that best frames and coaxes innovation within a given context.

Related to policy The potential is immense for innovation platforms (**structure**) to act as a countervailing force providing smallholder farmers with more voice (**agency**) in policy decisions that affect their lives. Policy pathways (Chapter 8) add another layer of complexity to the discussion on agency and structure related to sustainability. We saw an interesting example of the interplay between the two concepts: where national policies offer structural support to the capacity of a sector to innovate – structural support for agency. Where policymakers have been successfully engaged and are taking up innovation platforms in national agricultural policy as a tool for technology dissemination or innovation generation, we have a very interesting dynamic related to the concepts that frame our analysis. Conceptually this presents fresh insight into the capacity to innovate, as the government created the structure (policy) which allows human agency (capacity to innovate at individual, organizational and institutional levels) to flourish. It is a fascinating illustration of the intricate interplay between structure and agency and a different take and higher-level perspective on sustainability – beyond the individual innovation platform and the capacities of the people involved, to a sub-national or national level of creating room for the capacity to innovate to take root.

A final point of interest for policy dynamics lies in the interaction between policy (or regional) platforms, and local platforms (e.g., The Gambia and Burkina Faso). Lower-level innovation platforms are represented in higher-level platforms in order to influence actors at the higher levels, including industrial

processors, traders and policy makers. Thus the higher-level platforms are mechanisms (**structures**) for lower-level platforms to influence policy (gain **agency**) and win policy support. Conceptually, this is a **structure** (the platform) supporting **agency** (ability to influence policy) leading to **structural change** (new policies). An example of the latter is in The Gambia. Higher-level platforms provide a communication channel to lower-level platforms, enabling local stakeholders to exchange knowledge and information with external stakeholders at higher levels than would normally be possible. They gain influence in value chains and policy processes. Policymakers have acknowledged the importance of engaging directly in these platforms. Therefore, both local and high-level platforms provide a **structure** to local stakeholders to share knowledge and information with the outside. This provides **agency** to individual stakeholders and stakeholder groups in the platforms.

Emergent properties

Innovation platforms do far more than simply address an entry point: the unexpected happens when stakeholders are brought together, and unintended results and innovations are the outcome, addressing issues that were perhaps under the surface, or implicit. Making those issues explicit – or the threat of them becoming explicit, encourages people to be more honest brokers, and supports fair play among the actors in the system. Analysis of the cases presented in this book demonstrates this unexpected value of innovation platforms: they are much more than the sum of their parts (the different actors, the technologies being promoted, etc.). Bringing people together creates space for unforeseeable synergies: we have plenty of evidence of this.

These **emergent properties** link to the concepts of structure and agency where innovation platforms create the space (provide a **structure**) for individual and collective **agency** to be generated. That space is where the unexpected or the non-status-quo happens: from something as benign as women speaking out in meetings to system transformation (e.g., newly won transparency in seed certification in Burkina Faso). This demonstrates an inherent value to the innovation platform as a mechanism for agricultural sector development – a selling point, if you will. That selling point is the element of surprise. This book is rich with examples of emergent properties, including the following selected ones.

Transparency in the maize seed system in Burkina Faso A poignant illustration of an emergent property is the surprise impact of the innovation platform in Burkina Faso, in which ambiguity in seed certification processes ended when actors came together. Transparency was a much needed but unimaginable outcome that improved the functioning of the maize seed system and allowed farmers to access government certification services as was intended, but previously not possible (see Chapter 3, Burkina Faso case).

Meaningful work for vulnerable people in Sierra Leone The creation of meaningful work for blind people, amputees and survivors of polio and other vulnerable groups in the cassava processing plant was an emergent property of the innovation platform in Makeni, Sierra Leone. The platform was not set up as a project to help the more vulnerable members of the community, but

their lives improved through their participation as blacksmiths, processors and traders. They became effective and active contributors to the cassava value chain and the community, gaining respect, recognition and acknowledgement, as well as independence (see Chapter 4, Sierra Leone case and Chapter 9 on gender and inclusion).

Innovation platform "domino effect" in Cameroon After a joint meeting of representatives of the local platforms in Cameroon, the national farmers' organization, CNOP-CAM, took the initiative to create a national platform, aiming to provide policy influence to the local innovation platforms. The national level platform, which is now registered as a cooperative, aims to contribute to creating a favourable environment for sustainable cassava production, processing and marketing. The local platforms are represented in this national body. The technology-focused innovation platforms led to a national cooperative of cassava value chain stakeholders being put in place, and the single technology entry point gave way to other value chain segments being involved (e.g., processing and marketing) (see Chapter 4, Cameroon case).

***Mbala-pinda* for children's food security in the Republic of Congo** In the Republic of Congo, an emergent property of the innovation platform was to introduce cakes made from a mix of cassava and peanuts – locally known as *mbala-pinda* – as part of a school feeding programme. The opportunity to supply these programmes emerged when an innovation platform started to improve collective processing practices, leading to increased availability of *mbala-pinda*. The platform, which consisted mainly of women producers and home processors, and the national agricultural research institute together looked into possible markets. The school feeding programme, supported by the national government and an international NGO, proved an interesting option. In the meantime the research institute started to study the nutritious value of *mbala-pinda* and possible improvements to the product and related processing practices. While markets and improved practices were a part of the objectives of the innovation platform, improved childhood food security was the emergent property (see Chapter 4, Republic of Congo case).

Bargaining power through collective marketing in The Gambia Increased yields from the improved varieties disseminated via the innovation platform led farmers to realize that they could sell their surplus maize and that collective marketing could be beneficial. This was discussed among the facilitators of the local platforms at a regional platform meeting. The facilitators decided to make an inventory of the amount of maize that farmers on the platforms wanted to sell, and began negotiations with traders. This led to prices that were double what individual farmers would be able to get. Increased bargaining power is an emergent property of the local platform facilitators coming together in the regional innovation platform (see Chapter 3, The Gambia case).

Mediated trust between farmers and the seed company in Mali The national agricultural research organization in Mali aimed to introduce and promote improved maize varieties. Through the maize seed production platform, multiplication and availability of seeds were to be achieved. But there was a problem. The dissemination of the new varieties was constrained because the farmers and the seed company involved did not trust one another. Through the innovation platforms, this problem became apparent and with mediation by a

local leader, also a platform actor, trust was re-established. Trust is an emergent property of the multi-stakeholder platform in Mali (see Chapter 3, Mali case).

What makes these **emergent properties** of the platform is that they were not a part of the initial objectives or a direct, planned outcome. But the platform brought stakeholders together, allowing for these innovations and changes to happen. Accountability, transparency and trust building were earmarked as emergent properties from the innovation platforms studied. These outcomes were not planned or foreseen, but were necessary changes to improve the functioning of the sectors. These shifting dynamics created new "rules of the game" (**structures**). As a result, the maize and cassava innovation systems as a whole grew more resilient and able to adapt to changing contexts.

If the act of bringing stakeholders together – even when the initial objective is a technology push – is enough to create the environment for other kinds of (social, organizational and institutional) innovations and give space for emergent properties, then we have a compelling justification for investing in innovation platforms as an end unto themselves. They become a very convincing process-based investment, in which the results and successes are defined and realized on-the-go as the process evolves.

All DONATA cases had concrete entry points. But, was the concrete transfer-of-technology entry point critical to the process? In Chapter 5, we concluded from the case experiences that concrete entry points are, indeed, essential. Understanding the concepts behind innovation platforms, complexity and value chains allows for further evolution of an innovation platform beyond its initial technical entry points. Conceptual understanding is first and foremost important for the initiating organizations and facilitators, but eventually this understanding should be shared more broadly with other actors involved. We concluded that an entry point is not a limiting factor as long as facilitation is managed. However, an interesting future action-research question is: what happens if the process is prioritized rather than a concrete entry point? It would be fascinating to examine whether a process entry point would work or if a very tangible entry point is vital to the success of the innovation platform, even though we know that the focus of the innovation platform activities is very likely to change over time.

There are two possible routes: concrete, tangible entry points versus a more process-based entry point. The first route – that the entry point must be concrete but what it is does not really matter as long as it is relevant to the actors – assumes that innovation will happen through stakeholder interaction and the fact that people are learning together. The entry point is just a place to start, and the innovation platform will develop and move in unexpected directions over time. Thus, the entry point will not constrain its evolution. In this first scenario the flexibility and space for shifting priorities and platform composition are critical. Learning infusions are essential.

The second route – focus from the beginning on the process and a general theme – assumes that concrete issues and activities will emerge once stakeholders start engaging with one another. Skilled facilitation and an early definition of jointly defined "entry points" are necessary to retain actors' interest. This second scenario may not leave much time and space for the facilitators to learn on-the-go as they need to get the process right from the start, whereas the first

scenario focuses first on the tangible entry point and can build capacity to facilitate through the process. This may be a consideration also in experimenting with process-based entry points.

Resilient institutions

If the ability of poor rural households to cope with the complexity and uncertainty is not strengthened, they will be reluctant to innovate and may remain stuck in a poverty trap (Thompson et al. 2006:17). Thus, supporting poor households in creating more resilient and robust food systems is a both a necessity and a massive challenge for agricultural development. A resilient and robust innovation system is able to adapt to changing circumstances. The people involved in the system need to be knowledgeable about change and how to adapt to it (Ostrom 1990). Likewise, a resilient institution implies learning and reflexivity. A resilient and robust institution is one that is able to cope with external and internal troubles.

Innovation platforms can be institutions in and of themselves – a set of rules and regulations around a group of actors – and a mechanism for stakeholder interaction. They provide a structure for the stakeholders involved to cope with complexity and uncertainty, and to adapt to internal and external changes. During the initial phases, the focus of the innovation platforms was on the entry point and the linear technology-transfer approach applied: hardly the picture of resilience we are after. However, the "one-issue" platforms evolved in many cases towards dynamic multi-stakeholder processes, which provided a "space" within which people could address new challenges and opportunities that came up. The flexibility of the new systems, their dynamism, and the capacity of the people involved to jointly reflect and act, implies that innovation platforms can indeed be resilient institutions. They provide a **structure** within and through which the actors involved can exert **agency** to address the challenges and adapt to changes in the context.

Internal organization and stakeholder group representation System resilience, i.e., the ability to adapt as a system, also requires a degree of organization of stakeholder groups, producers in particular. Not all farmer group members can be involved in an innovation platform at all times. Hence good organization and representation are preconditions for the system to function, to adapt to changes and to be resilient. The strong initial focus on technological innovations in platforms that started as farmers' groups has contributed to a strong organization and representation of farmers in the platforms and contributes to the resilience of the system as a whole.

Internal adaptability and flexibility In order to be resilient, an organization must have easily adjustable regulations, rules and policies (Ostrom 1990): that is to say, flexibility nurtures resilience in institutions. Does this imply that informal, non-registered platforms are more resilient than formalized platforms? We do not have hard evidence to support this claim. What we did see is that context matters. This is especially true when it comes to the decision on the degree and kind of formalization for an innovation platform – from registration to ground rules to leadership structure. Sometimes innovation

platforms become organizations and are formalized. Indeed, sometimes registration is essential in order for the platform to exist in a particular country (e.g., **Cameroon**): in these cases the innovation platform is an organization rather than an institution (**structure**).

Other times formalization might constrain the development of a platform or its flexibility and ability to adapt to changing needs and interests. The experiences in **Burkina Faso**, for example, suggest that non-registered innovation platforms are indeed flexible and able to adjust continually to take up new challenges as they arise. Being part of a formalized organization can create ownership and give identity to the people involved, but reduces flexibility and the ability to adjust to changes, adjust the internal regulations and ways of operating, and so on. Careful consideration of the context is needed in order to find a suitable balance between form and fluidity.

What is needed for the innovation platform to be robust and resilient in a given context? That is the key question and the response will vary from one country and sector context to the next. What degree and kind of formalization will allow an innovation platform and the capacity to innovate sustainable in a changing world?

Ability to adapt and interact with external forces The resilience of innovation platforms is also related to the ability of the people involved to interact with the outside world. Stakeholders knowing how to address problems by reaching out to others actors in the value chain contributes to resilience. Here we refer to the resilience of institutions (how people interact) but also to community resilience. An example is in Makeni, **Sierra Leone**, where the more vulnerable community members were included in the innovation platform. As possibilities for different people are built up, they become more active members of society, and the community becomes more robust and resilient.

Interacting with the outside world also involves engaging with the context at a different level. The country cases, where platforms are situated at different levels (local, regional) with strong horizontal and vertical linkages, illustrate that this multi-level functioning and communication provided opportunities to address problems and chances at different levels. It also allowed local actors, through the platform structures, to influence higher-level processes (policy, processing, marketing), increasing their agency. This seems to indicate that systems with well-connected platforms at different levels are more robust and resilient.

Learning and capacity development Within the DONATA initiative we observed that generating resilience requires inputs. The cross-country learning events provided learning opportunities to representatives from the different countries, contributing to a better understanding of platforms as multi-stakeholder processes. This was critical to build more robust institutions. But what is exciting is that a linear start can be transformed into something more dynamic and resilient over a relatively short period of time.

Monitoring and evaluation for learning and reflexivity Monitoring and evaluation are a tool that can be harnessed to assess and adapt to both internal and external changes. In this way they can support the learning and reflexivity necessary for a resilient institution. However, as was clear from the DONATA experience, monitoring and evaluation are a particular challenge for innova-

tion platforms. This hampered the work of the initiative as a whole, in each country, and in the individual platforms. The difficulty of setting up systematic data collection systems affected accountability, operational management and joint learning. By systematically collecting, storing, reflecting on and sharing information, monitoring and evaluation can provide structure to joint learning of the platform stakeholders. The complexity and uncertainty of agricultural innovation processes demand such learning-oriented monitoring and evaluation strategies, in which stakeholders jointly reflect on the innovation process and its context. This allows them to take adaptive measures where required, contributing to the resilience of the innovation system. More experimentation with how to effectively do monitoring and evaluation for multi-stakeholder processes is needed, but the potential is immense for it to contribute to resilient systems and robust institutions.

Final word

To close this book, we return to our play on words with roots (cassava root tubers) and grain (maize). Rootedness in local actor realities and context-specific conditions gives innovation platforms robustness and credibility when they engage in higher-level policy discourse. They offer a new way forward – going "against the grain" of typical food security and agricultural development programmes by providing a space for shared learning among stakeholders in a value chain. Food security is achieved when each individual has physical and economic access to adequate food or the means to procure such food (FAO 1996).

> *As part of the food systems, agricultural production, processing and marketing can contribute to food and nutrition security, as well as to health, decent livelihoods, gender equality, safe working conditions, and participation in political and cultural life*
>
> *–Anderson (2008), cited in Beuchelt & Badstue (2013:712).*

The flexibility and dynamism possible within an innovation platform offer unexpected resilience for addressing food security. By bringing people together, even where technology dissemination was the initial driver, more emerged than could possibly have been anticipated. New institutions were put in place, and the local actors involved in many of the platforms began to engage with changing national policy – finding a voice and taking their own agency in hand. This is very exciting and hopeful news!

But we also see that there is work to do, especially when it comes to inclusion of more vulnerable actors and gender equity. The role of public-sector actors in supporting both innovation platforms as a mechanism for stakeholder participation in sector development as well as in ensuring broad-based involvement of more marginalized actors needs to be nurtured and stimulated. **Agency** among policymakers is also important: to give them the evidence they need to "go against the grain" and to propose brave new policies that make a difference to the resilience of food security and food systems. The Comprehensive

African Agriculture Development Programme (CAADP) Pillar IV has taken agricultural innovation systems thinking on board in its policies to revitalize smallholder agriculture and create better opportunities for poor people to innovate (Futures Agriculture 2011). Innovation platforms are mechanisms for supported stakeholder interaction and learning and a key means for achieving this goal. Evidence is growing that innovation platforms are a robust way to ensure that locally rooted, stakeholder-driven possibilities come to the table. In **Burkina Faso** we already have seen the tipping point as innovation platforms are embraced wholeheartedly at the national level as mechanisms for sector development – agricultural and beyond. The question now is which countries will be the next to "go against the grain" of the status quo for national agricultural development and root their next steps in the local actors whose needs and aspirations hold the magic for innovation.

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	Film	QR code
	Burkina Faso	
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5	Nignan Olivier Alexandre, Provincial correspondent, Léo, Burkina Faso Information Agency	goo.gl/1OMpoN
6	Dagano Moussa Joseph, grain producer and ex-president, Fédération Nian Zwè	goo.gl/7zzfG8
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	Film	QR code
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10	Bilogo Marcelin, Cameroonian Network for Horticulture Sector Operators (RHORTICAM)	goo.gl/qkb21e
11	Marie Joseph Medsem Engama, national consultation framework, farmer-based organizations of Cameroon (CNOP/CAM)	goo.gl/kPJAFb
	Republic of Congo	
12	Stev Mapangou, Focal point, DONATA Republic of Congo	goo.gl/FjyOvH
	The Gambia	
13	Momodou Jallow, trader/transporter, Samba Kalla	goo.gl/2K6rFE
14	Lamin Queen Jammoh, governor, North Bank Region	goo.gl/P1ypfq

	Film	QR code
15	Mariama Gaye, processor, Kerr Jarga platform	goo.gl/yPb0fI
16	Chief Jimfatima Jobe, producer and district chief, Jokadou, Kerr Jarga platform	goo.gl/WRGsAN
17	Bram Kebbeh, transporter, Fass Omar Saho platfomr	goo.gl/RfgkNW
18	Ebrima Njie, trader, Fass Omar Saho platform	goo.gl/tyBvQ4
19	Omar Drammeh, producer and facilitator, Fass Omar Saho platform	goo.gl/xtJf5H
	Sierra Leone	
20	Muskuda Jalloh, producer, Makeni innovation platform, and coordinator, farmer federation of Bombali district	goo.gl/aBjJZS

	Film	QR code
21	Muskuda Jalloh, producer, Makeni innovation platform, and coordinator, farmer federation of Bombali district	goo.gl/Ezmuqv
22	Jennifer Kamara, blind trader, Pate Bana Marank platform, Bombali district	goo.gl/u3c3eO
23	Lovette K. Sovie, trader, Gbotima platform, Kenema district	goo.gl/r3EH82
24	Andrew Conteh, trader Pate Bana Marank platform, Bombali district	goo.gl/d3BnvL
25	Saidu Fornah, blacksmith, Makeni platform, Bombali district	goo.gl/HltJlT
26	Ismail Mugum Bangura, processor, president, Pate Bana Marank platform	goo.gl/dg84hW
27	Ismail Mugum Bangura, processor, president, Pate Bana Marank platform	goo.gl/E7rQXN
28	Jackasiano A. Jalloh, assistant director of extension, field operations, Ministry of Agriculture, Forestry and Food Security	goo.gl/wcXr6C
	Other films	
29	Agricultural innovation systems explained. Royal Tropical Institute	goo.gl/9BBp9E
30	Women in extension. AccessAgriculture	goo.gl/Tk4LjX

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CORAF/WECARD

The **Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles/West and Central African Council for Agricultural Research and Development (CORAF/WECARD)** is one of the constituent sub-regional research organizations of the Forum for Agricultural Research in Africa (FARA). CORAF/WECARD comprises 22 national agricultural research systems. Its key functions include: coordination and facilitation of agricultural research and development programmes, projects and initiatives that have potential for spill-over and impact in similar agroecologies of the various countries; competence and skills enhancement of the national research systems to improve performance and change; access to and use of information and knowledge to improve productivity and increase incomes especially of smallholders; and advocacy to increase the scale of investment and policy reforms necessary to improve the performance of the national research systems in contributing to sector-wide growth. The mission of CORAF/WECARD is to contribute to sustainable improvements in competitiveness, productivity and market access of agricultural produce and products within and outside of West and Central Africa. This is facilitated by responding to key demands of the national research systems and other target groups and is fully aligned with the goals of the Comprehensive Africa Agriculture Development Programme and the agricultural policies of the Regional Economic Communities of West and Central African states.

Royal Tropical Institute

The **Royal Tropical Institute (KIT)** in Amsterdam is an independent centre of knowledge and expertise in the areas of sustainable international development. Founded in 1910, KIT aims to improve the livelihoods in low- and middle-income countries through social and gender equity and sustainable economic development. KIT's 35 professional advisors work with public- and private-sector partners internationally to find sustainable solutions to the development challenges they face related to inclusive value chains, sustainable agribusiness development, rural innovation, land tenure, food and nutrition security, gender and rights. We work in the global south where we operate in extensive networks of partners and clients.

KIT acts as a bridge between different kinds of knowledge-holders situated in academia, policy and practice. We work with partners to co-create knowledge and generate new insights that improve efficiency and the effectiveness of organizations, enhancing their impact. KIT brings key competencies including contemporary and relevant global knowledge and thinking, access to international networks and innovations, applied research capacity, ability to translate insights for client use, analytical skills to review organization and programme performance (conducting impact assessments, for example), capacity to engage clients in learning (as from action research), and experience to translate and communicate outcomes into policy. All this is done with the aim of improving businesses and organizations and supporting evidence-based decisions-making both in policy and in practice.

Against the Grain and to the Roots

Maize and cassava innovation platforms in West and Central Africa

Innovation platforms are one of the most promising new approaches to agricultural and rural development to emerge over the last few years. An innovation platform is a group of individuals and representatives of organizations who come together to identify, diagnose and solve common problems. They represent different types of stakeholders: farmers, researchers, extension personnel, government, traders, input suppliers, and service providers.

Innovation platforms are a key part of the Dissemination of New Agricultural Technologies in Africa (DONATA) initiative of the Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles/West and Central African Council for Agricultural Research and Development (CORAF/WECARD). This book describes how innovation platforms are being used to guide and implement research, development, processing and marketing in six countries participating in the DONATA initiative: Burkina Faso, Cameroon, Republic of Congo, The Gambia, Mali and Sierra Leone. Rather than dealing with high-value export crops or niche products, this book focuses on two crops that are vital for the food security and livelihoods of millions of small farmers throughout west and central Africa: maize (the "grain" in the title) and cassava (the "roots").

The book analyses six processes and themes that are key to using innovation platforms for development: getting started, facilitating stakeholder interaction, sustainability, influencing policy, gender equity and inclusion, and knowledge and information sharing. It has links to 30 short films in which farmers, processors, researchers and government officials reflect on their experiences in participating in innovation platforms. It draws some insights and makes recommendations on how to use innovation platforms to promote agricultural development in rural Africa.

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