AGRICULTURAL INNOVATION MKTPLACE

SOUTH-SOUTH
COOPERATION
BEYOND THEORY

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AGRICULTURAL INNOVATION MARKETPLACE

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The editors

dedicate this book to all those committed to agricultural research in developing countries;

and honor Eliseu Roberto de Andrade Alves, an icon in Brazilian Agricultural Research.

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Celebrating our partners

The Agricultural Innovation Marketplace, the MKTPlace, the object of this book, became a reality due to the contribution and hard work of a vast number of individuals from many different institutions and countries, listed below in alphabetical order. The MKTPlace governance acknowledges and celebrates their contribution to the success of this partnership.

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preface

Agricultural Innovation Marketplace - South-South Cooperation Beyond Theory provides a thorough discussion of the creation, the current status, and future of the Agriculture Innovation Marketplace (The MKTPlace), an international, open partnership aiming to contribute to agricultural development in Africa, Latin America, and the Caribbean. Using the recent success of Brazilian agriculture, this partnership seeks to learn from those achievements, financing and organizing projects in other developing countries.

Beginning with a brief outline of Brazil's development, this book focuses on the MKTPlace as an international partnership that supports, through policy dialogues, knowledge sharing and agricultural research, smallholder development in Africa, Latin America and the Caribbean, with the final goal of reducing hunger and poverty, and creating growth. To encourage these developments in other countries, the MKTPlace

brings together researchers, academia, NGOs, producers, and policy makers with the partnership of the Brazilian Agricultural Research Corporation, Embrapa. The MKTPlace has been supported by a wide range of partners, and its implementation has counted on the knowledge and networks of Embrapa, FARA and IICA.

The MKTPlace has been successfully implemented since 2010 and has funded 82 projects around the world. In an effort to expand, a new program, *Building on the Successes of the MKTPlace (M-BoSs)*, was developed that focuses on previously fruitful MKTPlace projects in order to provide extended financing and wider adoption of positive practices.

As this development platform continues to grow, the MKTPlace contributes to the goals of eradicating poverty and hunger, achieving food security and improved nutrition, and promoting sustainable agriculture. Originally developed with the UN's Millennium Development Goals in mind, the MKTPlace now also seeks to satisfy the UN's Sustainable Development Goals, put in place at the end of 2015.

The editors

AGRICULTURE AND development

The opportunity to do well by building a good marketplace can arise whenever there are desirable but underused resources that take too much time to find and transfer.

A. Roth
Nobel Prize Winner

1.1

A GLOBAL PUSH TOWARDS AGRICULTURAL DEVELOPMENT

"In the 21st century, agriculture continues to be a fundamental instrument for sustainable development and poverty reduction. Agriculture alone will not be enough to massively reduce poverty, but it has proven to be uniquely powerful for that task" (World Bank Report, 2008). The time has come again to focus strongly on the development of sustainable agriculture, world hunger, and poverty. Not all countries develop at the same rate, so help from already industrialized countries is essential for improvement, aiding in areas such as education, health, security, and agriculture.

Many international organizations, such as the World Food Program (WFP) and the Food and Agriculture Organization (FAO), have been formed to participate in the creation of an integrated agenda for global development and assistance. Summits and global meetings have been concluded to decide which direction to take, and at the end of 2015, the UN put into

South-South cooperation: a bit of history

International technical cooperation was institutionalized between 1950 and 1970 with the creation of several UN specialized agencies (such as UNESCO, UNDP, IFAD), industrialized countries' bilateral cooperation agencies (USAID, JICA, DFID/UK, among others), and the OECD.

In the early 1950s, technical cooperation among developing states, known as South-South cooperation (SSC), became an important dimension. This occurred in three phases: (i) the Cold War, from the "Movement of Non-Aligned" and the deepening of South-South relations; (ii) the 1980s and 1990s, characterized by the paralysis of SSC; and (iii) the 2000s, with the creation of the Millennium Development Goals and "co-optation" of SSC by traditional donors (developed countries and international organizations) through triangular cooperation. The vertexes of triangular cooperation are: the country, which provides cooperation; the recipient (or partner) country; and a third party, which can be a developed country (USA, Japan) or international organization (FAO, UNDP). As an example of triangular cooperation, the project "Technical support to nutrition programs and food security in Mozambique" is a trilateral initiative between Brazil, Mozambique, and the United States of America.

Cooperation between developing countries is recognized by the Buenos Aires Plan of Action (BAPA, 1978), adopted by 138 countries at the United Nations Conference on Technical Cooperation among Developing Countries (TCDC). TCDC is important because it allows these countries to develop, acquire, adapt, transfer, and accumulate knowledge and experiences for their social and economic development. The BAPA recognizes, however, that this form of cooperation is not new and has been happening for several years. The novelty lies in the realization that cooperation between developing countries is becoming increasingly important in promoting development and that it is complementary to that provided by industrialized countries.

The 1980s and 1990s were marked by economic and debt crises and structural adjustment programs in several Latin American and Asian countries. The debate then was restricted to issues such as inflation control, reduction in government size, reduction of the debt burden on developing countries, and greater trade and economic openness, which hindered the consolidation of South-South cooperation.

In the early twenty-first century, SSC has undergone changes, particularly given the changes in the international system, such as the deepening of globalization, the financial crisis, the decline in foreign aid from traditional donors, and the rise of emerging state and non-state

actors. Emerging state actors are countries that have more recently achieved a higher level of development, such as South Africa, Brazil, India, and Turkey. Non-state actors are mainly non-governmental organizations (NGOs - such as Save the Children and Oxfam) and non-profit foundations, as in the case of the Bill & Melinda Gates Foundation.

Among the objectives of the SSC, are (i) strengthening the capacity of developing countries to identify and jointly analyze their main development issues and develop strategies to address them, (ii) promoting and strengthening collective self-reliance among developing countries through the exchange of experiences, and (iii) increasing the quantity and improving the quality of cooperation for international development.

Global Goals

At the end of 2015, global leaders joined at a UN summit meeting in New York, committing themselves to 17 Global Goals (GGs) to reach three objectives in the next 15 years: end extreme poverty, fight against injustice and inequality, and contain climate changes. Each Global Goal is composed of several targets (169 in total) that will lead to the achievement of a specific goal. According to the Sustainable Development Platform of the United Nations "the goals and targets are the result of over two years of intensive public consultation and engagement with civil society and other stakeholders around the world, which paid particular attention to the voices of the poorest and most vulnerable." The development process of the Global Goals carried consultations with "more than 7 million global citizens, including civil society and businesses, who shared their priorities for the future."

The Global Goals were set by the United Nations to carry on the MDGs, whose effect finished at the end of 2015, to provide a sustainable future focused on international development. The Global Goals come from a notable legacy, from the 1972 Stockholm "Conference on the Human Environment" to the Millennium Development Goals (MDGs). Despite the extraordinary progress made over these years, almost one fourth of the world's population continues to live on less than USD 2 per day.

The relevance of the Global Goals

The MDGs failed to consider the root causes of poverty, were not concerned with human rights, and never addressed economic development in its eight goals. The MDGs also overlooked gender inequality as well as the wide nature of development. In theory, the MDGs applied to all countries, but in reality they were considered targets for poor countries to achieve with the financial support of wealthy states.
Besides continuing the work of the MDGs, the GGs will be different and offer better opportunities for improvement. A few reasons can be highlighted:

1. A global meeting on sustainable development. One of the main differences between the Global Goals and the Millennium Development Goals is the process in which they were established. The MDGs were voted on during a closed UN Assembly, but the creation of the GGs was based on varied research (including consultancy to the public in general), meetings, and "global conversations" conducted by the UN.

2. Equity and sustainability at the base for a thorough Global Goals agenda. While the GGs were set to continue the objectives of the MDGs, the real advance is the fact that they

combine development, the environment, and climate concerns into a more integrated agenda. The main goal of the GGs is to abolish extreme poverty by 2030, but their purpose goes beyond that by targeting key points for transformative change.

3. Unifying sectors through an integrated agenda. The Global Goals will ultimately contribute to unifying the economic, social, and environmental dimensions of development even more, building on what the MDGs already represented; sustainable development cannot be achieved through each sector individually. The GGs integrated agenda calls for a reformulation of the traditional process, based on individual decision-making, to improve cross-sectoral problem-solving and create better solutions.

4. Contribution from all. The GGs agenda reflects the global difficulties that are faced today. One of the main distinctions of the GGs is the renewed call for a "Global Partnership for Sustainable Development," where all countries and sectors need to act, unlike the North-South cooperation model sustained by the MDGs. This new call goes beyond aid by emphasizing shared responsibilities and contributions from all countries, based on the idea of equality among all. Through more efficient use of multi-stakeholder partnerships, the GGs formulate a different way of developing partnerships that are capable of making system-wide changes.

effect the Sustainable Development Goals (Global Goals, GG), replacing the previous global markers known as the Millennium Development Goals. Eradicating poverty and hunger, achieving food security and improved nutrition, and promoting sustainable agriculture are among the objectives.

Not all countries that rely on agriculture have advanced techniques and technologies and therefore cannot ensure food security for their population. The Green Revolution helped double food production and saved hundreds of millions of lives, through the development of new technologies and disease-resistant varieties of grain, for example. In some places, such as Sub-Saharan Africa, approaches from the Green Revolution were tested but were unsuccessful; therefore, new strategies had to be implemented. Many who are affected by poverty and hunger are smallholder farmers, and one of the best ways to reduce hunger and poverty is by helping farming families increase their production in a sustainable way, which in return contributes to improved livelihoods. Adequate government policies, health services, education, technologies, and access to markets are key pillars for development. A problem that must also be taken into consideration is inequality between genders. In Sub-Saharan Africa and South Asia, for example, women are important contributors to farm work, but because they have less access to improved seeds, markets, better techniques, and technologies, their yields are usually significantly lower than lands farmed by men. Addressing this problem can also help households become more productive and contribute to reducing hunger and poverty within poor families.

On a global scale, the Organisation for Economic Co-operation and Development (OECD) aims to promote policies that will improve the economic and social well-being of people around the world. It provides the opportunity for governments to participate in a forum, where they can work together and share their experiences, seek solutions to mutual problems, and work with other governments to understand more about

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how to promote social, economic, and environmental change. The help that one government gives to developing countries, by promoting economic development and welfare, is labelled as Official Development Assistance (ODA). The OECD has a list of developing countries and territories, and only aid to these countries counts as ODA. The list is regularly updated and currently contains over 150 countries or territories with per capita incomes below USD 12,276 (data from 2010).

The Agricultural Outlook is a collaborative effort of the OECD together with the Food and Agriculture Organization (FAO) that will extend from 2015 to 2024. It brings together expertise and experience from both of these organizations and also the inputs from collaborating countries to provide an annual assessment of expectations for the next decade of agricultural commodity markets worldwide. The 2015 Outlook contained a special focus on Brazil. It is one of the world's largest economies and a global supplier of food and agricultural products. Brazil has made significant progress towards eliminating hunger and reducing poverty, and further reductions through agricultural development are expected.

Also contributing worldwide, the Group of Seven (G7), which is an informal bloc comprising the United States of America, Canada, France, Germany, Italy, Japan, and the United Kingdom, is strongly committed to the eradication of hunger and malnutrition. The group supports the Sustainable Development Agenda on food security and nutrition, established in late 2015. They meet annually to discuss issues such as global economic governance, hunger, and poverty worldwide.

The G7 will continue to build upon their existing wide range of interventions for food security and nutrition and will pay particular attention to hunger and malnutrition in rural areas; recognizing and making women and youth central to multi-sectoral development approaches in rural areas; promoting agricultural and food value chain approaches that

IICA: Supporting the inter-American push towards agricultural development

The Inter-American Institute for Agricultural Cooperation (IICA) is an entity specialized in inter-American agricultural systems, and it supports the efforts of its member states to achieve agricultural development and rural well-being. The institute has a strong network with global reach, with representatives in 34 countries in the Americas and a permanent office for Europe in Madrid, Spain.

IICA acts to endow countries with qualified institutions to overcome their challenges and reach objectives and goals of sustainable development and rural well-being. The institute promotes a permanent effort of institutional repositioning, with the intention of following the changes in an international, national, and regional context, as well as facing new agricultural and rural challenges to meet the demands of its member countries.

The IICA aims to promote international technical cooperation through capacity building, institutional strengthening, elaboration and execution of projects, promotion and facilitation of knowledge exchange and experience, and supporting proposals and evaluations of public policies for sustainable rural development.

The institute focuses its activities to promote competitive, sustainable, and inclusive agriculture. Its strategy includes the following objectives: to improve agricultural contribution to food security, to increase the productivity and competitiveness of the agricultural sector, to improve the contribution of agriculture for adaptation to climate change, and to enhance agriculture's contribution to territorial development and rural well-being.

Public agricultural policies and agricultural government institutions benefited from the knowledge produced and disseminated over the years, which allowed the IICA to increasingly position itself in rural development issues and contribute to the promotion of more competitive, sustainable, and inclusive agriculture.

UK's DFID approach to agricultural development

Agricultural development in developing countries faces new challenges and opportunities; for example, how will we ensure food security for a rapidly growing population in an era of climate change and increasing shocks and disasters? How can we make agriculture more productive and food systems more sustainable and resilient? How can we better benefit girls and women who make up the majority of people working in agriculture in developing countries but are not currently getting enough from their labor?

DFID's approach to agriculture is based on the assumption that in the long term, sustained wealth creation and poverty reduction will depend on the economic transformation of countries and a transition for most farmers from primary agricultural production to productive and better paid employment, including in a transforming agrifood sector. DFID's Agriculture Policy Framework sets out how we will take an increasingly commercial approach to agriculture to generate jobs and raise incomes. It has three elements:

- Promoting pathways to commercially viable agriculture by linking smallholder farmers to markets, financing agriculture infrastructure, and boosting agribusiness, including through the development of capital investments.

- Helping farmers and their families to have opportunities and jobs outside their farms and supporting small- and medium-sized businesses in rural areas to thrive.

- Supporting a majority of small farmers without other economic opportunities to strengthen their resilience as an important contribution to poverty reduction and tackling food insecurity.

Whilst there is a need to invest in rural public goods, such as infrastructure (roads, water, energy), agriculture research, technology, and innovation are essential for inclusive productivity growth and value addition. As such, support for agricultural research and the promotion of innovation are key elements of DFID's agriculture development policy. In addition, DFID pays particular attention to the inclusion and economic empowerment of women, the production of nutritious and safe food, and environmental sustainability, all issues at the core of the Agricultural Innovation MKTPlace program. In particular, global agreements made at COP21 in late 2015 to address and adapt to climate change compel us to search for new ways to build resilience to climate risks and reduce agriculture's impact on the environment whilst meeting rising food demand and natural resource scarcity.

link smallholder farmers with business, attract investment, and generate non-farm employment and income; natural resource conservation and sustainable use; supporting development of pro-poor technologies; promoting best practices for adaptation to climate change; and pursuing proven and effective nutrition-specific interventions addressing undernutrition and micronutrient deficiencies.

Agricultural development is not only an agenda of the public sector; it is also one of the most important initiatives of the Bill & Melinda Gates Foundation (B&MGF). The foundation has made significant impacts on improving agriculture in various countries. Their approach is based on listening to farmers and addressing their specific needs, increasing farm productivity, fostering sustainable agricultural practices, and achieving greater impact with partners.

"As part of a broad effort involving our partner countries, and international actors, and as a significant contribution to the post 2015 development agenda, we aim to lift 500 million people in developing countries out of hunger and malnutrition by 2030."

(G7, 2015).

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On the African continent, the New Partnership for Africa's Development (NEPAD) is an economic development program of the African Union, focused on providing a complete vision and policy framework for accelerating economic cooperation and integration among African countries. It is a new intervention organized by African leaders to address problems that the continent faces, such as poverty, development, and Africa's international marginalization, and offers African countries an opportunity to take control of their current situation. The organization manages a number of programs and projects in six theme areas; among them are agriculture, food security, climate change, and natural resource management.

NEPAD's Agriculture and Food Security program focuses on helping African countries improve their economic growth through agriculture-led development, especially for smallholder farmers. Agricultural development on the continent is driven through NEPAD's Comprehensive Africa Agriculture Development Program (CAADP), which brings together African leaders, policy makers, scientists, partners, and farmers to promote agricultural growth and sustainable development on the continent. CAADP's objective is to contribute to poverty alleviation and elimination of hunger in Africa by raising agricultural productivity and requiring countries to commit part of their national budgets to agriculture.

Climate change and preserving the environment are important factors for sustainability, biodiversity, food security, and stability across the African continent. Pollution, deteriorating soil quality, desertification, and poor air quality are all problems to be dealt with. NEPAD's Climate Change and Natural Resource Management program helps to coordinate, support, and promote regional and national programs that have the objective of fighting these environmental threats. The goal is to bring together regional and continental groups to work together and share knowledge, as well as encourage each other in addressing the threat that is climate change.

In Latin America, the Inter-American Institute for Agricultural Cooperation (IICA) is an organization specialized in agricultural systems in the region and supports the efforts of its member-states to improve agricultural contribution to food security, increase the productivity and competitiveness of the agricultural sector, improve the contribution of agriculture for adaptation to climate change, and enhance agriculture's contribution to territorial development and rural well-being. This is achieved through capacity building, institutional strengthening, elaboration and execution of projects, promotion and facilitation of knowledge exchange and experience, and supporting proposals and evaluations of public policies for sustainable rural development.

Finally, the CGIAR is a partnership addressing agricultural research for development, whose work contributes to the global effort to tackle poverty, hunger and major nutrition imbalances, and environmental degradation. The work of the CGIAR is carried out by 15 international research centers and partners, and a multi-donor trust fund finances the research carried out by the centers through the CGIAR research programs.

1.2

AGRICULTURE AS PATHWAY FOR DEVELOPMENT


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The historic role of agriculture in development, including economic development, is well known and well documented. For the last 200 years or so, agriculture was the main engine of growth for most countries. Industrialization, development, urbanization, and other processes came, many times, at the expense of a neglected rural space, including its agriculture. Despite spectacular changes in the rural sector in many countries, as exemplified by the modernization of part of Brazilian agriculture in the past few decades, the numbers are still astounding in terms of peoples under different stresses, from hunger to poverty to voicelessness. **However, there is not a single, simple model to be followed in pursuing agriculture-based development.** Some countries, as exemplified by Brazil, even had, for many years separate ministries to cater to the needs of small-scale farming (Ministry of Agrarian Development, founded in 1999) and entrepreneurial agriculture (Ministry of Agriculture, Livestock, and Food Supply, founded in 1860).

The 2008 World Development Report – Agriculture for Development provides a rich set of elements supporting the thesis that agriculture has been underutilized as a tool for development. Recognizing this gap, Brazil is involved in South-South cooperation to support agricultural development in different parts of the world, as exemplified by work in Honduras and with specific cotton-producing African countries (see boxes).

South-South cooperation: a tripartite program with Honduras

The trilateral cooperation involving the governments of Brazil, Honduras and the United States of America started in 2011 to contribute to poverty reduction and increase food security in the rural environment, with two pillars: agriculture and renewable energy. Led collaboratively, the projects of those two pillars intertwined since the beginning of the demand identification phase with government technicians and smallholders from the target-area – the regions of Arco Seco de Honduras. The agricultural pillar was technically conducted in its major part by Embrapa, with the participation of the University of Florida and DICTA (Dirección de Ciencia y Tecnologia Agropecuária, Ministério de Agricultura e Ganaderia, Honduras); it involved actions in food and nutritional security and reinforcements to productive chains of sesame, beekeeping and cashew. Major results obtained from 2013 to 2015 include: 1. Capacity strengthening of Honduran technical staff in technologies developed in Brazil such as organic sesame and cashew cropping, beekeeping, bean production and storage technologies; 2. Identification, introduction and validation of vegetable cultivars developed in Brazil which could have seed produced in Honduras (lettuce, eggplant, onions, carrots, cauliflower, tomato, cabbage); 3. Identification, introduction and validation of biofortified cultivars of beans and maize (with higher levels of zinc and iron or carotenoids); 4. Identification, introduction and validation of sesame cultivars and technologies for the aggregation of value to the sesame crop; and 5. Establishment of a special unit in charge of validation and training in an agricultural high school.

Brazilian cooperation in the Sahel: the Cotton-4 project

The Cotton-4 project (2009-2013), or simply C4, emerged from the demand of four West African countries – Benin, Burkina Faso, Chad, and Mali – held in the World Trade Organization (WTO). The cotton industry is the engine of the economy of the C4 countries; however, in the international market their cotton production is unrepresentative. This is mainly due to soil and climatic characteristics that hinder the planting of this crop, traditional farming techniques with low use of technology and heavy subsidies in cotton producing developed countries.

Coordinated by the Brazilian Cooperation Agency (ABC) and implemented by the Brazilian Agricultural Research Corporation (Embrapa), the project began in 2009 with a focus on strengthening local capacity, in training human resources and the sharing of experiences, supported by adapting Brazilian technology. The C4 project sought to practice horizontality, a basic principle of Brazil's South-South cooperation, supported by three technology pillars: genetic improvement of cotton plant, development of integrated pest management and the introduction of no-till system.

In its four years of implementation, the project succeeded in: (i) revitalizing the Sotuba research station in Mali, providing laboratory and administrative infrastructure for its activities; (ii) introducing ten Brazilian varieties and conducting collaborative tests; (iii) conducting 22 training courses in Brazil and the partner countries to researchers and extension workers and (iv) developing, together with the partner institutions, three handbooks of agricultural best practices and five technical bulletins. The C4 project has fulfilled its objectives, promoting the strengthening of alliances, the exchange of knowledge between the participating countries and promoting more lasting effects for its achieved results.

With three out of every four poor people in developing countries living in rural areas, and most of them depending directly or indirectly on agriculture for their livelihoods, and with about 80% of African agricultural production coming from smallholders, the initial focus of the Agricultural Innovation Marketplace (see Part 2) on Africa could not be different. There is a need and an opportunity to make smallholder farming more productive and sustainable.

"Improving the productivity, profitability, and sustainability of smallholder farming is the main pathway out of poverty in using agriculture for development. What will this take? A broad array of policy instruments, many of which apply differently to commercial smallholders and to those in subsistence farming, can be used to achieve the following:

- Improve price incentives and increase the quality and quantity of public investment;
- Make product markets work better;
- Improve access to financial services and reduce exposure to uninsured risks;
- Enhance the performance of producer organizations;
- Promote innovation through science and technology; and
- Make agriculture more sustainable and a provider of environmental services" (World Bank, 2008).

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Agriculture for growth

"For many years to come, the growth strategy for most agriculture-based economies has to be anchored on getting agriculture moving. Success stories of agriculture as the basis for growth at the beginning of the development process abound.

Agricultural growth was the precursor to the industrial revolutions that spread across the temperate world from England in the mid-18th century to Japan in the late-19th century. More recently, rapid agricultural growth in China, India, and Vietnam was the precursor to the rise of industry. Just as for poverty, the special powers of agriculture as the basis for early growth are well established."

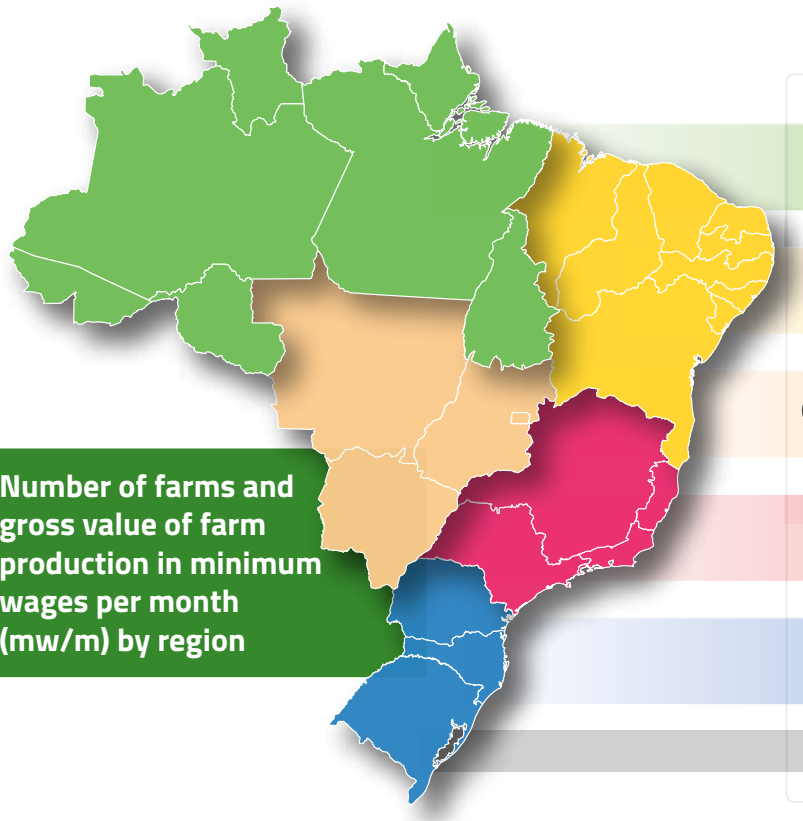
(World Bank, 2008)

Brazil: a case study

Brazil has just over 4.6 million farms, and the concentration of production, measured not by farm size but by gross value of production, is the hallmark of modern Brazilian agriculture. Land size does not explain value of production well. There are four classes of gross annual value of production per farm, tentatively classified as:

- **very poor:** annual farm gross value of production of up to two minimum wages per month (mw/m);
- **poor:** 2 to 10 mw/m;
- **middle class:** 10 to 200 mw/m; and
- **rich:** over 200 mw/m.

The very poor class corresponded to 67.3% of farmers that reported production. This class' share of total production value was only 3.4%; at the other extreme are the rich farms, with 27,434 units corresponding to 0.6% of all farmers that reported their production. They shared 51% of the total gross value of production. There were about one million poor farms, 21.8% of total farms, that shared 10.2% of the gross value of production. The distribution of farms per region and gross value of farm production is presented below.



Number of farms and gross value of farm production in minimum wages per month (mw/m) by region

Regions	Farm number	%	mw/m per farm
North	413,420	8.9	6.4
Northeast	2,227,423	48.0	3.4
Center-west	264,115	5.7	25.3
Southeast	797,999	17.2	16.1
South	938,501	20.2	12.2
Brazil	**4,641,464**	**100.0**	**9.0**

Source: 2006 farm census and April minimum wage=R$ 300.00

The coexistence of small and large producers - relevance of small-scale (family) farming

The available data, at a first glance, may hide the importance of small-scale farming (SSF) or "family agriculture," as it is referred to in Brazil. Historically, large and small subsistence farms co-existed in the country, but it is generally accepted that the SSF sector received very little support from the government until the end of the last millennium.

The crude numbers suggest the poor sector to be irrelevant. Yet SSF is responsible for a large proportion of the staple crops in the country: 87% of the cassava, 70% of the beans, 46% of the corn, 34% of the rice, 38% of the coffee, and 58% of the milk production. It is, therefore, highly important not only for production but also for food security. The occupation of the rural space by people, rural employment itself, the improved management of the natural resource base, the improved domestic availability and stability of food supply, and the contribution to the balance of trade are some of the main positive factors highlighted by defenders of SSF as a model for agricultural development.

Despite the large number of policies implemented to support SSF, such as abundant, subsidized, low-cost credit, cash transfers of different sorts, technical assistance, youth–centered programs, and other policies, it seems clear that better policies are needed. In addition, and equally important, is the pragmatic recognition that some of these small farms are simply not economically viable and will require non-rural solutions to their development. SSF cannot be protected at any cost due to a sometimes romantic, ideological view of social development.

Policies and entrepreneurial agricultural development in Brazil

Industrialization policies set the pace for the modernization of Brazilian agriculture. Draft industrialization polices of the last industrialization period started at the beginning of the 1950s, and by 1985, they had accomplished their goal of transforming Brazil into an industrialized country. After 1985, they were discontinued. From the point of view of agricultural transformation, the following facts merit mentioning:

- A large amount of financial resources were transferred from the rural sector to finance industrialization. Agriculture was heavily discriminated by economic policies;
- The gap between urban and rural wages, including the fringe benefits, increased so much that it induced a large part of the rural population to migrate into the cities. In 1950, 64% of the population was rural; in 1980, 32%; in 2010, 16%. The wage difference in favor of the cities moved the country from a labor- and land-based agriculture to one, to a large extent, founded on science and capital;
- The persistent heavy discrimination of industrialization policies against agriculture caused the supply of food to lag behind the growth of demand, especially in the 1970s. Two consequences emerged: urban unrest because of high prices of food, and the loss of export opportunities in a fast-growing international market of commodities, since Brazil needed large amounts of hard currency to finance the industrialization policy investments;
- At the end of the 1960s and during the seventies and eighties, policies to strengthen agriculture were put into motion. Among them were subsided credit for modern inputs; credit for land acquisition; construction of roads, ports, communication facilities, and airports;

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heavy investments in extension and research programs; and export support policies. In the nineties, international trade was freed. Agriculture responded to the policies to the point of Brazil becoming the second largest exporter of food, and from December 1977 to January of 2007, the internal price of food decreased about half;

- Due to the gap in regional economic development, Northeastern Brazil lost population to other regions of the country; and
- There is a generalized decrease in the rural population. Since the Brazilian population is growing, rural exodus is the main cause of this decrease.

Rural exodus and contribution to urbanization

The discrimination against agriculture and special policies to foster growth of the cities increased their power to attract labor from the rural areas. Therefore, rural exodus was an intended result of economic policies to supply cheap labor to industries and urban activities. Furthermore, development models of the time contradicted the growth possibilities of agriculture in an environment of labor surplus; hence, rural migration policies achieved two goals at the same time: supplying cheap labor to the cities and relieving the rural sector of its excess of labor. The contribution of rural exodus to urbanization has been constantly decreasing for the past few decades. It is noteworthy that policy makers are uneasy with the growth of large cities, and the common view is that rural exodus is at the root of the problem, which in more recent years has seemed to be far from the truth. Hence, the reasons to support agriculture are linked only to the stabilization of food prices, farm income, and to increasing export surpluses. The contribution of rural exodus to the growth of Brazilian urban population decreased from about 17% in the 1950s and 60s to about 3% in the 2000–2010 period.

Style of agricultural growth

Up to the beginning of the 1970s, the increase in farm production required more area under cultivation, with stable or decreasing yields. Labor input moved up accordingly, and this was coherent with traditional farm dynamics: one that is very intensive in the use of natural factors of production and labor. From the 1970s on, agriculture

developed increasing yields, saving labor, with a very small expansion of the area under exploitation and a small increase in capital.

The past trend of the transformation of Brazilian agriculture – saving resources – was accentuated in the most recent period (2006-2010): there was a generalized fall in the use of inputs. The rates of growth of land and labor were negative; the rate of growth of capital reached the minimum; consequently, all inputs increased at a negative rate of 0.89%, and the rate of production growth, although lower than in previous years, was still high, at 3.81%. The sources of growth of Brazilian agriculture in the 1975-2010 period are presented below:

Sources of growth of Brazilian agriculture and annual average growth rates

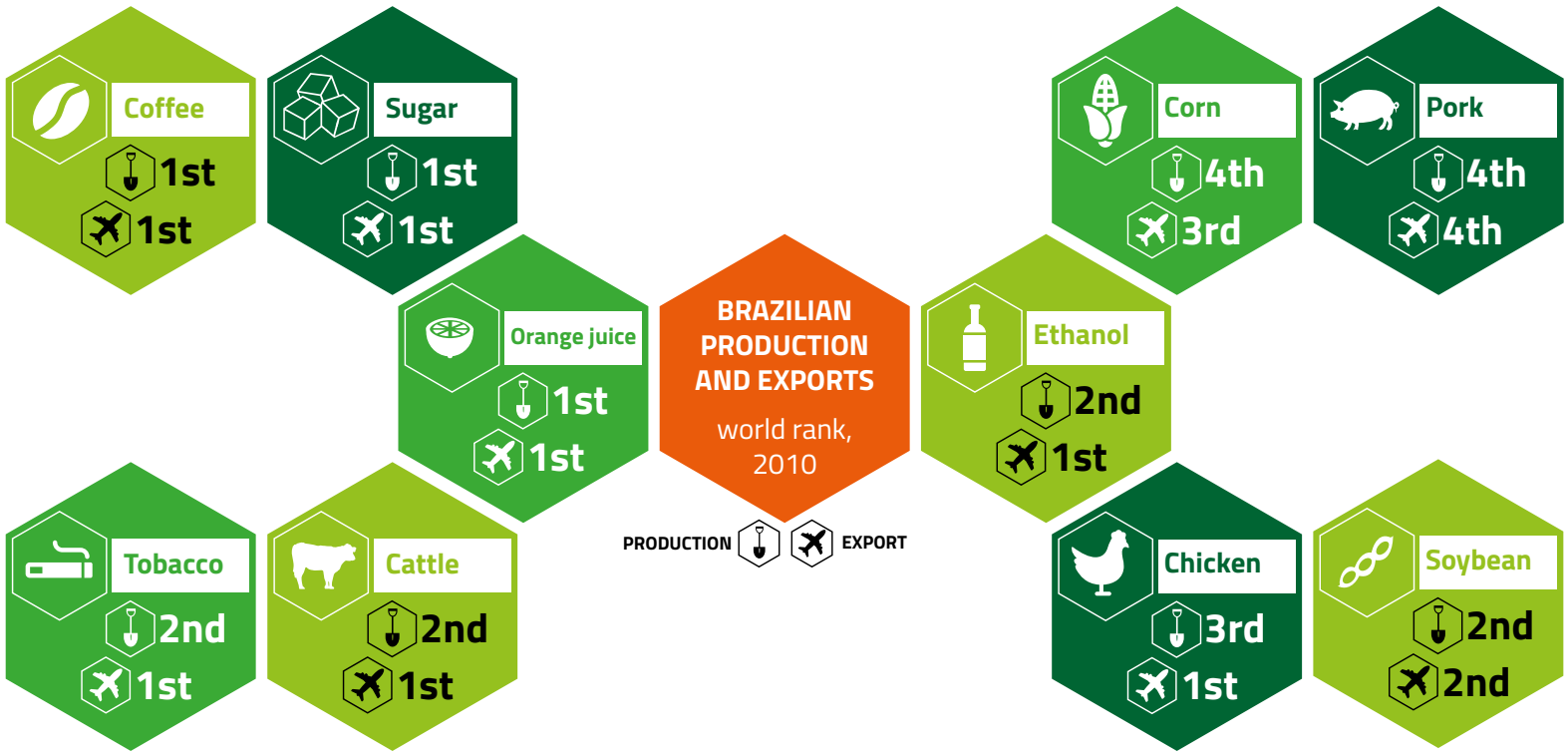
Items	1975-2010	1991-2010	2001-2010	2006-2010
Production	3.74	4.65	4.75	3.81
Inputs	0.12	0.05	-0.53	-0.89
Labor	-0.24	-0.43	-0.50	-1.00
Land	0.01	-0.07	-0.29	-0.12
Capital	0.35	0.56	0.26	0.22
TFP	3.62	4.60	5.31	4.75

Source: Gasques at al, 2011.

Agribusiness exports

Agribusiness exports have had a remarkable performance. From 2000 to 2010, thanks to trade liberalization, the surplus of agribusiness expanded at high rates to reach 63 billion in 2010, and agribusiness exports explain most of the surplus. In 2010, agribusiness contributed to 37.8% of all exports and only with 7.4% of all imports.

In the 1950s, coffee and sugar made up agribusiness exports. Since then, economic policies were designed to diversify the export list, and they succeeded. In 2010, Brazil was the largest exporter of seven products, and it ranked second in the export of soybeans. The country is the largest producer of coffee, sugar, and orange juice; the second-largest producer of beef cattle, tobacco, ethanol, and soybeans; the third-largest chicken exporter; and the fourth-largest pork exporter. Brazil is one of the largest producers and exporters of forest products as well. The idea that exports would favor export crops against staple crops, causing food prices to rise, proved to be wrong. Food basket prices are useful in discussing these controversies, as they cover products that are consumed by people with low income.



A word on the role of science and technology and tomorrow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Resource-saving technologies for resilient small-scale farming and entrepreneurial agriculture in Brazil will be required more than ever due to internal and external demands and concerns about sustainability, competitive markets, and climate change; land and labor are no longer the most critical factors to be considered. Adequate policies for the different sectors need to be tailored in pragmatic ways, which will support those who can, indeed, derive a living from agriculture; at the same time, different and additional mechanisms need to be put in place for those who have to be sustainably incorporated into the economy through other means.

Research and development (R&D) is directly connected to agricultural development and growth; R&D is recognized as having an impact on growth, with high rates of return. R&D and the innovation derived from it today are not limited to changes in products and processes, but also in marketing and business management.


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R&D is different from many business activities because they involve higher risks and unreliable gains on the investment. Yet R&D activities need to be implemented as in any other business. The productive sector is the main entrepreneur of R&D in Organisation for Economic Co-operation and Development (OECD) countries, and the average participation of their enterprises in the total R&D expenditure underwent a slight increase in the last three decades (especially in the 1980s). This evolution in the R&D activities of enterprises has been supported by initiatives of variable intensities from governments and the OECD. The public sector, however, continues to play a major role

in agricultural R&D in developing countries, and the reasons behind this ever-present need continue to be discussed in several *fora* and have been well summarized by Pardey *et al.* (2006).

"Over the past several decades, at least, spillovers of agricultural technology from rich countries to poor countries demonstrably increased productivity and food security for many parts of the developing world… However, recent developments in both the developed and developing worlds mean that poor countries may no longer be able to depend as they have in the past on spillovers of new agricultural technologies and knowledge from richer countries, especially advances related to enhanced productivity of staple foods. As a consequence of these changes, simply maintaining their current agricultural R&D policies may leave many developing countries as agricultural technology orphans in the decades ahead. Developing countries may have to become more self-reliant and perhaps more dependent on one another for the collective benefits of agricultural R&D and technology. Some of the more advanced developing countries like South Korea, Brazil, China, and India seem to be gaining ground, with productive and self-sustaining local research sectors taking hold."

(von Braun, in Pardey *et al.*, 2006)

The significant technological progress achieved in recent years in several areas, from genomics to automation to ICT, with a decrease in cost and an increase in technological accessibility, strongly suggest that developing countries can benefit greatly from these changes and may also become more dependent on one another, developing efficient and effective South-South cooperation models for today and tomorrow.

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1.3

LINKING BRAZIL TO AFRICA

Agriculture represents an important segment of the economies of Africa and Brazil. For example, cassava is a crop of major importance in both areas, with approximately 2.3 million hectares harvested in Brazil in 2014 compared to ca. 4 million in Nigeria, the largest producer in the world, 2 million in the Democratic Republic of Congo, and 1 million in Mozambique. In addition, similarities in climate, ecosystems, agricultural practices, and culture facilitate knowledge sharing and technological cooperation.

While the application of new technologies has become an important engine of pro-poor agricultural development in Brazil, where beans, rice, cassava, maize, soybeans, vegetable crops, wheat, and livestock occupy center stage, their contribution to growth in Africa is much more incipient. Brazil's successes are relatively recent and based on efforts that started mostly after 1970. Embrapa *(Empresa Brasileira de Pesquisa Agropecuária*), its national agricultural research organization, was created in 1973 and has generated knowledge and technologies in tropical agriculture that significantly contributed, together with many institutions and organizations, to the increase of the overall agricultural productivity by more than 150% and transformed Brazil into a major exporter of agricultural products in the world.

Because of its recent development and similarities with the African continent, Brazil's support for agricultural development in Africa was thought to be highly effective in supporting African nations in their efforts to achieve the Millennium Development Goals and, later, the Sustainable Development Goals. Primary partnerships between agricultural scientists and experts in Africa and Brazil could be further strengthened by basic science developed in industrialized countries, targeting these tropical challenges. Brazilian policies, experience, and focus on social programs provide an important link between goals set by African countries and Brazil vis-a-vis development. Brazilian programs and activities targeting social protection networks and that

have a clear, research-based, pro-development focus on the poor are fully aligned with the African Union's New Partnership for Africa's Development and its Comprehensive African Agricultural Development Program, the Framework for African Agricultural Productivity, as well as with Brazil's own foreign policy, as noted at the Africa-South America Summit, the India-Brazil-South Africa Summit, and similar events. These elements provided the background for a fruitful discussion between Embrapa and a few potential partners which led to the establishment of the MKTPlace as a partnership, considering the following basic elements:

- the importance of agriculture to the growth of the economies and development of Africa and Brazil;
- the similarities in climate, ecosystems, agricultural practices, and culture among regions; hence, the potential for more efficient generation and sharing of knowledge;
- the importance that agricultural research, led by Embrapa, had in Brazilian development; and
- the increasing government policies supporting South-South cooperation (SSC).

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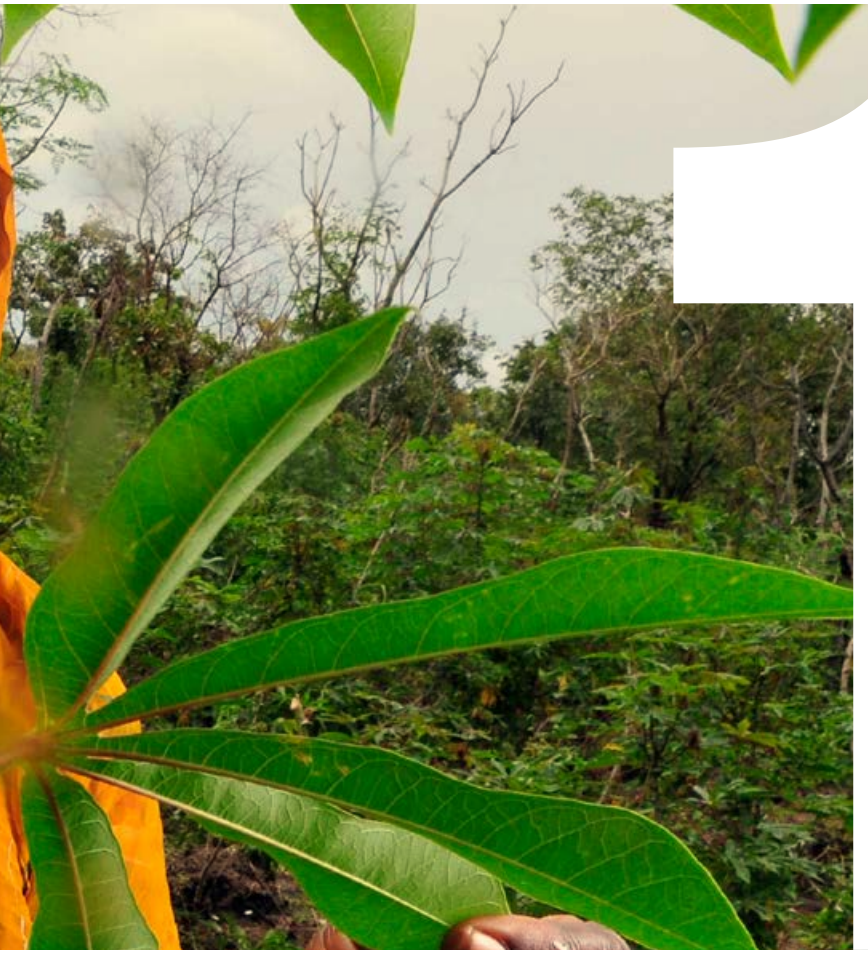

1.4 PARTNERSHIPS

The act of successfully working together, or cooperating, is carried out through the establishment of effective partnerships. Generally speaking, partnerships are a type of organization used by diverse groups of stakeholders to advance their mutual interests and achieve common goals. They can be formed and arranged in different ways depending on their specific goals, expected beneficiaries (from local to the international community), and the number (from bilateral to multilateral) and type (public, private, non-profit, for-profit etc.) of partners involved.

Considering the increasing global economic, social, and ecological interdependence, specifically the trend in globalization of knowledge generation; the similarities in ecosystems and the related pathways for social development among distant nations; and the ease of travel and communications, international multilateral partnerships become of special importance to the achievement of common global development goals. In science and technology, or more precisely, in R&D, the establishment of partnerships is a strategy to explore the potential of the various partners and build on the opportunities presented by different members, each bringing their own specific experiences and comparative advantages, fostering and facilitating

"Globalization brings with it an increasing blurring of boundaries that is challenging the notion of state sovereignty and transforming traditional forms of international cooperation into a more complex system of global governance (Zürn, 2013: 408). This is evidenced by the proliferation of global regulations in many issue areas (Goldstein et al., 2000: 385), with a growing number of commitments, principles, rules and declarations emerging to steer and govern the behavior of a range of actors."

OECD, 2015.

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the generation and sharing of knowledge, strengthening identities, building capacities, promoting innovation, and ultimately leading to social progress and development.

Successful international R&D partnerships are complex, long-term endeavors. They can focus on specific issues or sectors to ensure the participation of all stakeholders, scale-up solutions by expanding their reach to a higher number of beneficiaries, and enhance the delivery and impact through the integration of efforts from different actors and structures. They also involve a delicate combination of political, technical, and financial incentives and controls to maintain a dynamic alignment of partners and avoid conflicts of interest, fragmentation of efforts, and uncoordinated approaches.

"Agricultural research contributes to the enhancement of agricultural productivity, output, and quality; to improvement in sustainable use of natural resources; to lower consumer prices for food; and to the accumulation of physical and human capital among poor or vulnerable agrarian agents and households. These improvements lead to higher incomes, greater food consumption, better nutrition, and favorable changes in the allocation of individual and household assets"

(Spielman & Grebmer, 2004).

Key elements for successful international partnerships in agricultural research

The OECD (2015) stresses that international partnerships should consider the following overarching elements in order to be successful:

- provide a connection between global strategy and local implementation;
- establish clear, ambitious, and attainable targets agreed on by all partnership members; and
- ensure all partnership members participate (inclusiveness).

More specifically, these elements include the mobilization of the appropriate political and financial support, the definition of the organizational design to account for the various partners' values and goals, the governance structure to provide adequate decision-making, and the management tools and processes for financial management, monitoring and evaluation, and knowledge sharing and management. They are briefly outlined below:

Political and Financial Support

Political and financial support are necessary for the establishment and maintenance of successful international partnerships. Lack of either leads to failure or simply to the natural end of a partnership; after all, partnerships are born from the interest and support of the partners. Obtaining both political and financial support typically requires different strategies at different levels, and their commitment usually does not come simultaneously. Yet, having one of the two usually assists in obtaining the other. As the number of possible actors and scenarios vary considerably in different contexts, there are no recipes here, other than to make sure all key political and financial stakeholders are adequately identified, contacted, and put together within a logical communication framework that takes into consideration the political context of that specific time.

Organizational Design

How a partnership is designed and established is important to its efficient functioning. To clearly define the common goals and objectives in light of each partner's values, missions, and strategies is a fundamental first step. Next is the definition of the strategies to be used to achieve those common goals and the best structure needed to implement them effectively, which may vary, from rigid designs where partners decide to establish a physical structure to concentrate the work and administration in one place, to a network of virtually connected stakeholders with decentralized administration.

Governance

The United Nations Development Program (UNDP) established five principles that a good governance structure must have: voice and legitimacy, direction, performance, accountability, and fairness. These principles reinforce the idea that the governance of a partnership should clearly establish the roles and responsibilities of each partner, guarantee a balanced and inclusive decision-making process, and be designed to function expeditiously and effectively.

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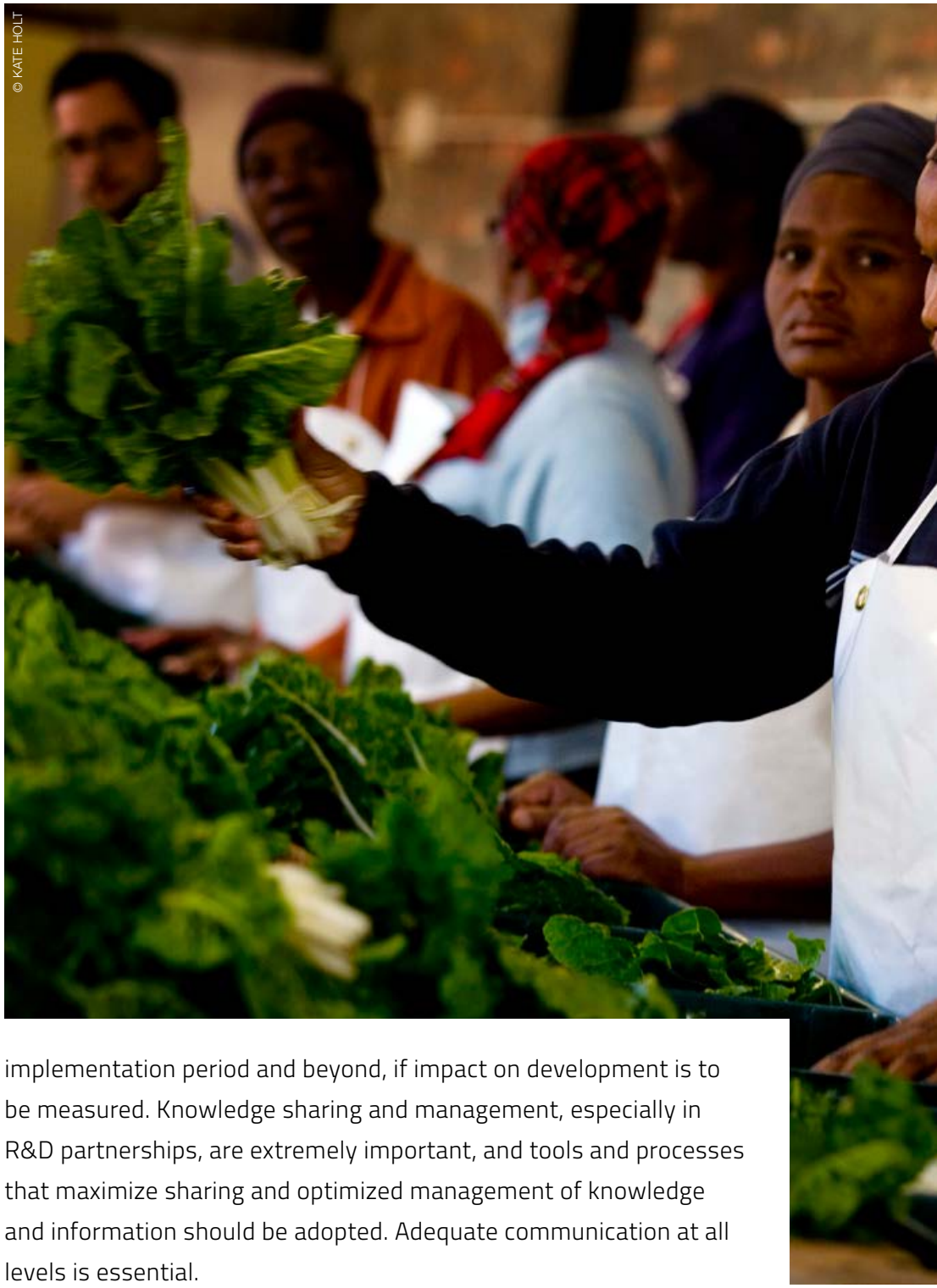
Management tools and processes

The tools and processes that will be used by a partnership to implement its activities are of crucial importance to its successful implementation and should be carefully considered during the design phase and adapted and improved as the implementation requires. The tools and processes related to planning, financial management, monitoring and evaluation procedures, and knowledge sharing and management should receive special attention. Planning is a critical management tool and should be used and revised constantly in order to follow the proper implementation of activities, foresee risks, and establish mitigation strategies. Financial management should prioritize flexibility and speed in the disbursement and procurement of goods and services while maintaining checks and balances. Internal and external monitoring and evaluation procedures should be considered from the beginning, based on clearly established indicators and conducted on a regular basis over the implementation period and beyond, if impact on development is to be measured. Knowledge sharing and management, especially in R&D partnerships, are extremely important, and tools and processes that maximize sharing and optimized management of knowledge and information should be adopted. Adequate communication at all levels is essential.



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Marketplaces as a type of partnership

When thinking of marketplaces, what usually comes to mind is a physical place where people go looking for what they need, such as a typical farmers' market or an electronic store. However, many other marketplaces with less visible boundaries comprise our day-to-day lives, such as firms or institutions offering jobs and people looking for jobs. Under this broader concept, sponsors or funding agencies, and researchers looking for funding and research partners, can be considered a marketplace with potential to be organized as a partnership in order to become more manageable and efficient.

2.

THE AGRICULTURAL INNOVATION MARKETPLACE

The MKTPlace

2.1 THE INITIATIVE


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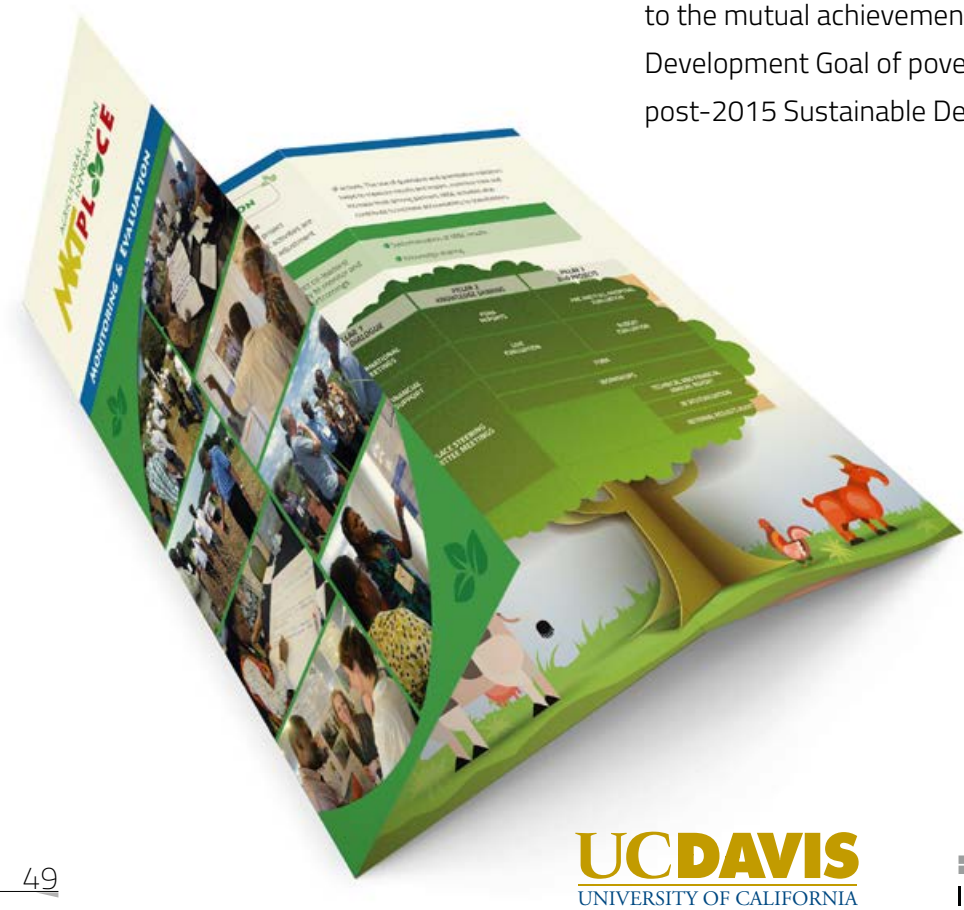
The MKTPlace is an international, open partnership aiming to contribute to agricultural development in Africa, Latin America, and the Caribbean, benefiting primarily the smallholder producers. It was designed to promote policy dialogues and knowledge sharing among researchers and institutions in these regions and to competitively fund collaborative research for development projects between African and, later, Latin America & Caribbean institutions, including the full range of actors involved in the generation of agricultural knowledge (research, academia, extension, private sector, NGOs, producers, policy makers), and Brazilian organizations, beginning with the Embrapa.

The overall benefit expected from the MKTPlace is to promote knowledge exchange among Africa, LAC, and Brazil in order to foster investments in agricultural research for development and contribute to agricultural development in the regions and, ultimately, to contribute to the mutual achievement of the United Nations Millennium Development Goal of poverty and hunger reduction and to the adopted post-2015 Sustainable Development Goals.



From launching to current status

The MKTPlace was first launched with Africa in May 2010 after approximately two years of discussions within and outside Brazil to mobilize political and financial support. The political moment came during the event "Dialogue Brazil-Africa on Food Security, Fighting Hunger and Rural Development" organized by the Brazilian Ministry of Foreign Affairs (MRE) in Brasilia, Brazil, gathering ministers of agriculture and representatives from more than 35 African countries. Following the initial success with Africa, the MKTPlace was extended to LAC and launched in October 2011, during the 2011 Meeting of Ministers of Agriculture of the Americas held in San Jose, Costa Rica, organized by the Inter-American Institute for Cooperation in Agriculture (IICA), gathering most ministers of agriculture from the region and their representatives.

As an international partnership, the MKTPlace has been supported by an open group of partners that have made cash and in-kind contributions totaling approximately USD 21 million. MKTPlace partners include: *Forum* for Agricultural Research in Africa (FARA), IICA, Embrapa, Brazilian Cooperation Agency (ABC/MRE), the United Kingdom Department of International Development (DFID/UK), the Bill & Melinda Gates Foundation (B&MGF), the International Fund for Agricultural Development (IFAD), The World Bank (WB), the Food and Agriculture Organization of the United Nations (FAO), the Inter-American Development Bank (IDB), the Brazilian Ministry of Agriculture, Livestock and Food Supply, the International Center for Tropical Agriculture (CIAT), and UC Davis.

Up until 2016, the MKTPlace organized four major international events, several partner policy dialogues, and funded 82 R4D projects, with 42 under implementation; it has also paved the way for successful projects to be scaled up through a new joint initiative, the M-BoSs (Building on the Successes of the Marketplace), which has already mobilized over USD 9 million.

This South-South collaboration with active northern support is making an important contribution to more productive agriculture in Africa and LAC, complementing ongoing efforts by national governments.

Key building events timeline

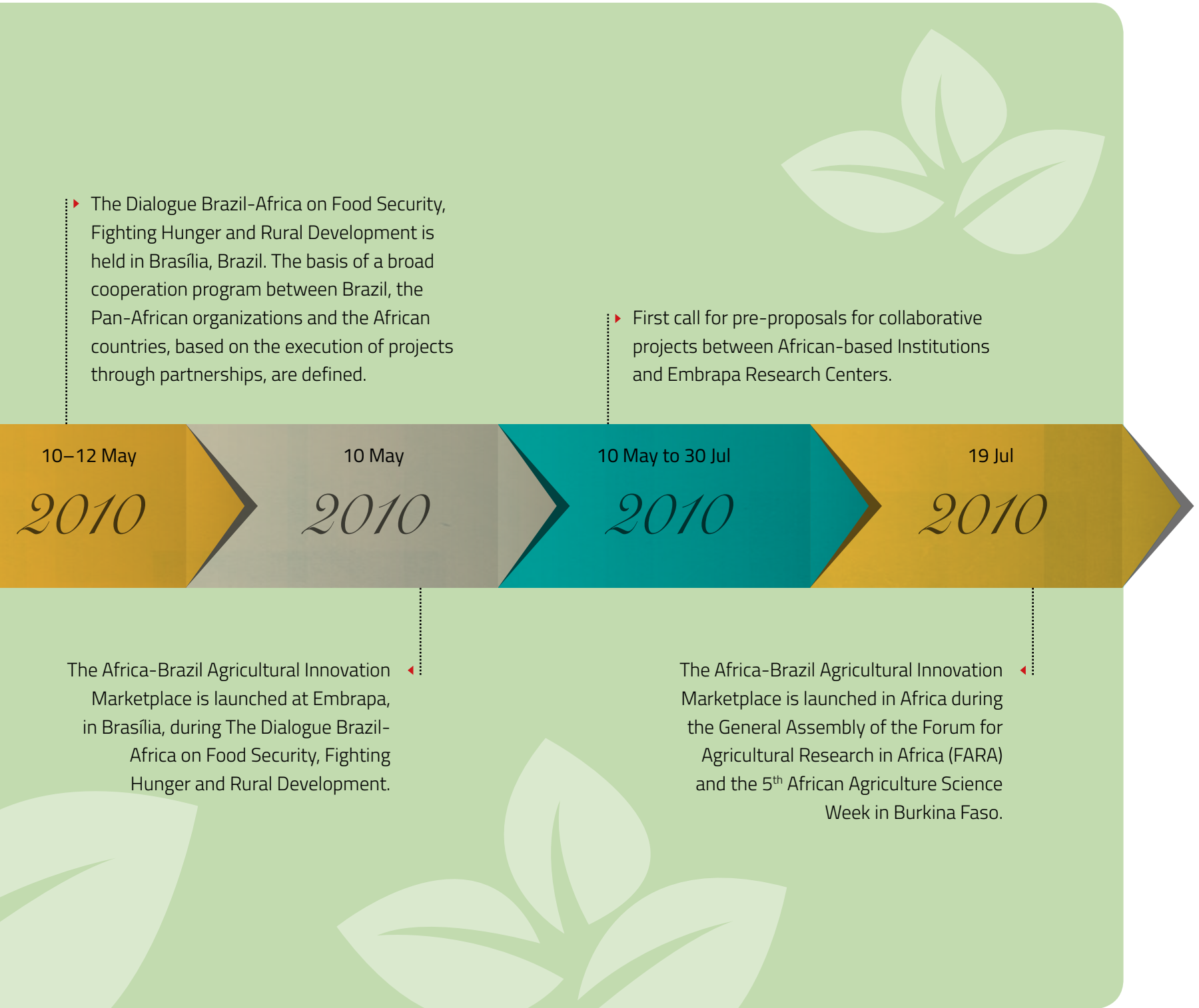
2008

Discussions are held between Embrapa, The World Bank, DFID, IFAD and FARA on the MKTPlace, and first steps are outlined. CGIAR innovation marketplace and other similar activities (World Bank Development Marketplace) provide initial examples.

2009

1–3 Jul

The 13th African Union Summit is held in Sirte, Libya. During the event, the Brazilian Government proposes holding a "Dialogue Brazil-Africa on Food Security, Fighting Hunger and Rural Development" in Brazil.


The Dialogue Brazil-Africa on Food Security, Fighting Hunger and Rural Development is held in Brasília, Brazil. The basis of a broad cooperation program between Brazil, the Pan-African organizations and the African countries, based on the execution of projects through partnerships, are defined.
First call for pre-proposals for collaborative projects between African-based Institutions and Embrapa Research Centers.
10–12 May 2010
10 May 2010
10 May to 30 Jul 2010
19 Jul 2010
The Africa-Brazil Agricultural Innovation Marketplace is launched at Embrapa, in Brasília, during The Dialogue Brazil-Africa on Food Security, Fighting Hunger and Rural Development.
The Africa-Brazil Agricultural Innovation Marketplace is launched in Africa during the General Assembly of the Forum for Agricultural Research in Africa (FARA) and the 5th African Agriculture Science Week in Burkina Faso.

The Africa-Brazil Agricultural Innovation Marketplace *Forum* is held at Embrapa, in Brasília.

First MKTPlace-supported projects approved.

Latin-America and Caribbean Agricultural Innovation Marketplace is proposed.

- The LAC-Brazil Agricultural Innovation Marketplace is launched during the 2011 Meeting of Ministers of Agriculture of the Americas.

- A new round of project pre-proposal presentations is open for both Africa and LAC.

- The Africa and LAC initiatives are merged into the **Agricultural Innovation Marketplace, and a new website and online system is developed**.

- A new program, M-BoSs (Building on the successes of the Agricultural Innovation Marketplace) to support scaling up and out of successful Marketplace-supported projects is launched with support from the Bill and Melinda Gates Foundation

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2.2.

FROM THEORY TO PRACTICE

The activities outlined in the previous section and their positive outcomes were achieved by a carefully crafted and implemented strategy that had as its foundations strong support from initial partners, clear public awareness efforts in major national and international events, strong leadership by the project coordination unit (PCU), choice of governance structure, establishment of clear rationale, objectives and pillars and a strong and lean operational unit supported by adequate information/communication technology (ICT) and agile financial arrangements; these are discussed below in detail.

Rationale, pillars and objectives

The overall rationale for the MKTPlace included the importance of agriculture for the economies and development of Africa, LAC, and Brazil; the similarities in climate, ecosystems, agricultural practices, and culture among regions; the importance that agricultural research, led by Embrapa, had in Brazilian development; and the potential that products, technologies and services developed in and for Brazil could have in Africa and LAC. These characteristics attracted – and continue to attract – the attention of various national agricultural institutions in developing countries as well as that of international organizations and development agencies in industrialized countries. This has created high demand for cooperation with Brazil and Embrapa, in particular. At the same time, an increase in policies supporting South-South cooperation initiatives with Brazil has been observed, in part certainly due to the Brazilian example. This sort of convergence between objectives of a multitude of organizations focusing on development, recognizing the importance of agriculture to development and that of technology to agricultural development was essential to the launching and implementation of the MKTPlace.

To take advantage of this point of convergence and respond adequately to the demand for technical cooperation with Brazil, the MKTPlace was

set up over three complementary pillars: policy dialogue, knowledge sharing activities, and the competitive funding of collaborative R4D projects (these pillars are described in more details in specific chapters). The overall idea was to generate and/or adapt and share with demanding countries a critical mass of Brazilian-generated products, technology, knowledge, or services with potential impact on agricultural development in Africa and LAC. The political dimension behind the MKTPlace was carefully considered, and public awareness efforts were central to its implementation.


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Governance

Typology, structure, and actors


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The MKTPlace governance model was designed to direct, monitor, supervise, and evaluate the initiative with the objective of meeting the needs and expectations of the stakeholders. The model adopted fits the network governance typology, based on its multiplicity of actors, the interdependence and autonomy among them, resource division, a common goal of the stakeholders, and the format used for elaboration, development, and implementation of the Program.

From a theoretical point of view, the management of the MKTPlace meets the standards of good governance, establishing limits and responsibilities. According to Ostrom (1990), the principles below characterize robust and sustainable governance systems:

- Clear definition of objectives, boundaries, activities, and resources;
- Coherence of rules and local conditions (period of time, space, and availability of technologies and resources);
- Management of collective decisions – the partners participate in defining/adapting the rules;
- Monitoring and evaluation systems;


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- Recognition of rules by external authorities; and
- Alignment and articulation of the inter-sectoral management.

The MKTPlace governance is based on two main components: an Executive Committee (EC) and a Steering Committee (SC). The first is comprised by Embrapa, IICA, and FARA, and the second by the sum of the Executive Committee with the other partners who support the MKTPlace. Basically, the EC headed by Embrapa is responsible for the management and operation of the program, performing administrative and technical roles, controlling and applying resources, and defining M&E activities and organizing events, among others; while the SC functions as a sounding board for the EC and has a vital function of raising awareness about the MKTPlace. This architecture allows the MKTPlace, through the EC members, to explore the outreach and the networks of its partners in Africa (through FARA) and in LAC (through IICA), in addition to mobilizing FARA's and IICA's expertise in agricultural and rural development. The SC is engaged in critical operational steps, such as proposal evaluation and approval, meeting management,

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etc., considerably raising the perspective of ownership for the institutions involved, in other words, characterizing them as true partners and not only traditional donors.

The institutions in the MKTPlace are very heterogeneous, from distinct countries and segments, having their own development agendas and priority areas. However, this characteristic has not been an obstacle for participating in the MKTPlace, since the created governance arrangement allows individual strategies to be followed. Contributions from MKTPlace members have been provided as cash and/or in kind by most SC members. Two specific members, FAO and IDB, have contributed exclusively by further expanding the public awareness of the MKTPlace on the international stage.

Operationally, internal and external communication flow well and with regular intervals, including the use of online informational systems.

This constant communication effort guarantees MKTPlace partners' understanding and participation in the Program. From a structural point of view, there is a high level of trust among MKTPlace governance members, a good relationship and institutionalization, and well-defined norms and procedures approved by all members.

Some strong points

The success of the governance model adopted by the MKTPlace can be attributed to several factors:

- The strong engagement of its stakeholders, i.e., the active participation of the SC members;
- The sustainable and coherent actions adopted by the MKTPlace EC;
- A realistic, well-defined work plan and matrix of responsibilities since day one;
- The credibility of the institutions and people involved;
- The M&E activities performed periodically;
- The management of project funds directly by the researchers;
- The transparency in accountability;
- The availability of information/results for the partners and society;
- The vast experience of the MKTPlace leadership in large-scale project management;
- The high value attributed to true partnership;
- The availability of considerable numbers of high-level scientific Embrapa staff interested in international development; and
- Program adaptability and flexibility catering, within program boundaries, to the strategies of the different partners, thus maximizing resource use.


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Another important aspect that has helped the success of the MKTPlace is the EC's institutional and leadership stability. However, the same level of stability has not been observed in the SC, but the impact of the change does not seem to affect the MKTPlace outcomes.

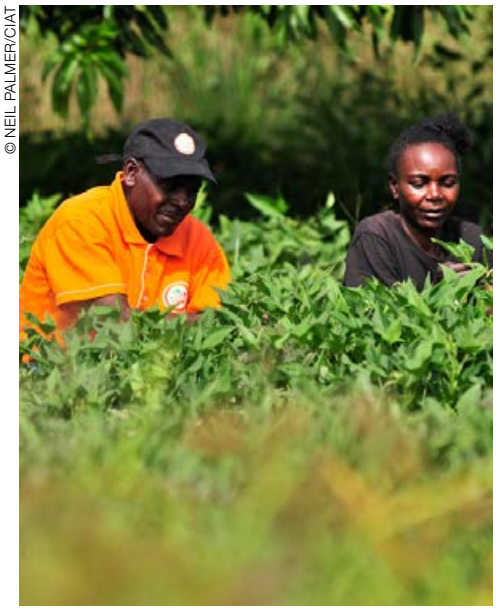
Some potential weaknesses

The MKTPlace has counted on independent external evaluations who have identified potential weaknesses, such as dependency on the social abilities of its managers and the risks linked to changes in member strategies, norms, and human resources.

The fact that the MKTPlace's governance network is centered on one organization (Project Coordination Unit at Embrapa), and on a small team, generates a potentially large risk to the program, which is heightened by the fact that the MKTPlace uses Embrapa's technical/administrative structure for part of its operation.

Roles played by the PCU at Embrapa include:

- Search for new partnerships, development of draft contracts, guidelines and norms;
- Organization of knowledge sharing events such as the *fora* and governance and other meetings and required documentation;
- Management of the network of participating researchers;
- Monitoring and evaluating of supported research for development projects; and
- Internal and external communication.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Governance of an idea

Governance is a complex process and involves a dynamic interaction among institutional, procedural, and political elements. In creating and designing a program, such as the MKTPlace, the latter element usually plays a major role. At this stage, governance depends mostly on how the coordination and cooperation are promoted among the members to provide execution of activities and adaptation to contingencies.

The discussions for the creation of the MKTPlace started two years before its official launch in 2010. It was the result of an initial dialogue involving Embrapa, the World Bank, FARA, IFAD, and DFID. The idea was to gather Embrapa's scientific excellence and techniques, the role of FARA in facilitating agricultural development in Africa, and the expertise of the World Bank in knowledge exchange to support African development. DFID and IFAD were approached by Embrapa to engage in the MKTPlace.

It is worth mentioning that during the pre-operational phase of the MKTPlace, aspects such as leadership, trust, reputation, and relations among its members gained high importance. These mechanisms support and strengthen communication, coordination, knowledge sharing, and management, moderating the process of decision-making once the Program is consolidated.

IICA

IICA conducts its work for the Latin American and Caribbean agricultural sector based on four strategic objectives: to contribute to food security and poverty relief, to increase the productivity and competiveness of the agricultural sector, to improve the sustainable management of natural resources and the adaptation to climate change, and to contribute to the implementation of public policies for territorial development and rural welfare. One of IICA's pillars is agricultural innovation, and it is implemented through network cooperation mechanisms that provide space for the exchange of methodologies, experiences, good practices, technologies, and knowledge. The institute also promotes agricultural innovation through program articulation in national, regional, and international R&D mechanisms such as PROCINORTE, PROCITROPICOS, PROCISUR, PROMECAFE, FORAGRO, Fund of Technical Cooperation, and the Insignia Projects. In regional scope, it collaborates with political networks as well as with the Agricultural Council of the South, the Center-American Council of Agriculture, and the Caribbean Community.

Recently, IICA adjusted its strategies to meet new challenges and cater to the demand to support member countries, focusing on sustainable development and the well-being of the rural population. Thus, the institute relies on its infrastructure, qualified resources, and valuable platforms in hemispheric, regional, and national scope.

In 2013, IICA and Embrapa signed an agreement to jointly implement the Agricultural Innovation Marketplace in the Latin American and Caribbean region. This partnership represents the mutual and complementary efforts of these institutions to contribute effectively to the rural agricultural development of the member-states of IICA and to amplify their cooperation through innovative instruments. This agreement was recently extended to 2020.
The objectives, pillars, and thematic areas of the MKTPlace are perfectly aligned with the strategies, interests, priorities, and technical cooperation efforts promoted by IICA. Thus, the institute presents itself as a qualified and preferred partner to collaborate in implementation of the Agricultural Innovation Marketplace.

IFAD

The global context for smallholder agriculture and rural development has changed significantly in recent years and will undoubtedly continue to change in major ways in the post-2015 period. IFAD's operations and activities in the future will necessarily be affected by these changes, and their development impact will depend on how well smallholder farmers, governments, and IFAD address key challenges and how well they take advantage of emerging opportunities such as increasing demand for food resulting from higher incomes and rapid urbanization.

Agriculture remains the mainstay for the livelihood of rural people in developing countries, with some 500 million smallholder farms supporting around 2.5 billion people and responsible for up to 80% of the food produced in sub-Saharan Africa and parts of Asia. Although their number may decline in the long term, smallholder family farmers are likely to remain major producers of food in developing countries in the next decade and beyond. National and global development efforts will therefore have to give due priority to smallholder agriculture. Recent global consultations on the post-2015 development agenda indicate an emerging consensus on key development goals. These include the eradication of extreme poverty, the equitable sharing of benefits from economic growth, the creation of decent job opportunities for all, the sustainable management of natural resources, and effective adaptation to climate change.

IFAD believes that smallholder agriculture development and rural transformation will need to be an integral part of the post-2015 global development agenda if its goals are to be attained. Rural households account for a large proportion of the people who live in extreme poverty and who are hungry and malnourished, and many of them are smallholder farmers. At the same time, smallholder farmers account for up to 80% of the food produced in many developing countries. The development of smallholder agriculture, along with the growth of the rural economy, can therefore be powerful engines of inclusive and sustainable development. They can contribute to economic growth, employment and poverty eradication, gender equality, food and nutrition security, and the sustainable management of the environment.

Through the development of productivity enhancement technologies; NRM improvements; policy, institutional, and market strengthening; knowledge management; and the development of smallholders and poverty alleviation-targeted technologies, the MKTPlace is making a significant contribution to the development of smallholder agriculture, through research and knowledge sharing on agricultural research and technologies developed in Brazil and now benefitting both African and Latin American countries. IFAD is proud of having supported this knowledge management and the South-South cooperation initiative from the start and is privileged for its continued partnership with Embrapa through a follow-up cooperation program on technology adaptation for smallholder farmers.

DFID

DFID works with Brazil to enhance development impact in developing countries by taking some of its learning and testing it in other contexts. Brazil has demonstrated that change is possible by transforming its agriculture sector and tackling food insecurity faster than most countries. Brazil has also achieved this transformation with relative sustainable models and a commitment to increasing sound environmental practices. This has prompted a clear demand from low-income countries to learn from its experience.

Through a competitive application process, the MKTPlace supports small innovative research projects between Embrapa and African, Latin American, and Caribbean research institutions focused on benefiting smallholder agriculture. Since its inception in 2012, DFID funds to the MKTPlace have supported a total of 33 projects in Africa and nine in Latin American and Caribbean countries.

The MKTPlace is enabling the transfer of Brazilian tools and innovative approaches to increase agricultural productivity, strengthen food security, and improve natural resource management for the benefit of small farmers in Africa. Through strengthened partnerships between credible Brazilian and African institutions, testing and adapting Brazilian models, increasing the capacity of researchers and government institutions, and the generation of evidence, the program is already showing positive impacts in targeted countries. Some of the technologies generated, such as the use of Nitrogen-fixing bacteria inoculation in cowpea, which can reduce or eliminate the use of Nitrogen in cowpea, and the development of bio-pesticides, have huge potential for Africa. Other projects, such as increased milk production for smallholders in Kenya through a local dairy innovation platform, have a direct impact on smallholders and potential for scale-up.

Embrapa's state of the art agriculture research capacity is no doubt behind the success of the MKTPlace. Similarities in climate, ecosystems and agricultural practice also facilitate knowledge and technology sharing. But equally important is the fact that African researchers value the strong partnership, communication and professionalism of Embrapa and that they view Brazil's experience as more relevant and more recent for African countries than that of traditional donors.

DFID is now supporting a new program called M-BoSs (Building on Successes of the Agricultural Innovation MKTPlace), which will build on a selection of successful MKTPlace projects. The M-BoSs projects aim to replicate results at scale, influence policy and support access to markets for longer-term sustainability. Promoting agricultural transformation will require a specific focus on market and value-chain development to help smallholder farmers become sustainably profitable and respond more effectively to market demand.

World Bank

Established in 1944, the World Bank Group (WBG) is headquartered in Washington, D.C. The World Bank is a vital source of financial and technical assistance to developing countries around the world. It is the largest multilateral development bank in the world. It provides low-interest loans and grants to developing countries to support investments in such areas as education, health, public administration, infrastructure, financial and private sector development, agriculture, and environmental management. The WBG also facilitates financing through trust fund partnerships with bilateral and multilateral donors. It offers support to developing countries through policy advice, research and analysis, technical assistance, and capacity development. In 2012 the WBG set two goals to be achieved by 2030: to end extreme poverty and to promote shared prosperity by fostering income growth for every country.

Focusing on these goals, the World Bank designed diverse mechanisms to deliver solutions for its beneficiary countries, providing seed money to encourage innovation, to catalyze partnerships, to leverage further funds, and eventually to increase development effectiveness.

One of these mechanisms is the Development Grant Facility (DGF), which until 2015 had supported 183 priority programs, contributing USD 2.1 billion and mobilizing an estimated amount of USD 16.6 billion from other partners. The MKTPlace was one of the projects supported by the DGF due to its focus on agriculture and its novel R4D approach. The importance of these topics was stressed in the World Development Report: Agriculture for Development (2008), which highlighted the role of agricultural development for poverty alleviation and the strategic importance of agricultural innovation. The following characteristics of the MKTPlace caught the WBG's attention:

- Piloting an approach that facilitates a large number of South-south partnerships;
- Creating access for African countries to Brazilian technology and know-how, and vice-versa;
- Galvanizing partners to agree on priorities and measurable goals;
- Sharing work among partners to leverage scarce resources and seize the advantage of economies of scale;
- Coordinating with partners to ensure adequate financing in critical areas and geographic coverage;
- Addressing externalities through best practices, research, capacity building, knowledge sharing, advocacy, and other services; and
- Giving a voice to developing countries in program governance.

The MKTPlace is the latest, but certainly not the last, phase in a partnership between the WB and Embrapa that is over three decades old. The collaboration on the MKTPlace has generated exciting results and has allowed other partners to join what quickly has become a strong and widely recognized initiative. In 2012, the MKTPlace won the WB Innovation Prize as an outstanding partnership supporting South-South collaboration.

The model piloted by the MKTPlace is simple, efficient, transparent, and results-driven. It allows the wholesale exchange of technology with many countries at a time, rather than just one. Discussions for replicating this type of partnership in other parts of the world and other sectors are in progress with the participation of different countries.

CIAT

The International Center for Tropical Agriculture (CIAT), with headquarters in Colombia, aims at reducing hunger and poverty, and improving human nutrition in the tropics through research aimed at increasing the eco-efficiency of agriculture. Working for the tropics on a global scale with research being conducted in Latin America, the Caribbean, Africa and Asia, CIAT has a genuine interest in the continuous strengthening of South-South collaboration and partnerships. It does so through multiple mechanisms, such as global research programs like CCAFS (CGIAR Research Program on Climate Change, Agriculture and Food Security) on climate change, or HarvestPlus on biofortification, international research funds like the Latin-American Fund for Rice Research (FLAR), or research alliances like the Pan-Africa Bean Research Alliance (PABRA). In most of those partnerships, Embrapa is a crucial research partner.

The fruitful participation of CIAT in the Agricultural Innovation Marketplace has been ongoing at three levels: first of all, CIAT has been actively participating in steering the Marketplace, be it in the review of proposals or through its participation in several business meetings as well as accompanying the face-to-face events and *fora*. CIAT has also been directly involved in the organization of the Marketplace *fora*. Based on its longstanding experience in knowledge sharing methods and principles, CIAT provided advice and led the design and facilitation of those participatory meetings. Finally, and most importantly, CIAT has been a beneficiary and an active participant by submitting proposals with Embrapa colleagues on diverse research matters that benefit greatly from South-South collaboration.

In CIAT's view, the Agricultural Innovation Marketplace provides the great benefit of combining the incubation of innovative ideas through its proposal scheme with the fostering of strong relationships between researchers who come from different continents and cultures but face similar challenges. The additional component of steering the proponents from the beginning towards the upscaling and sustainability of their expected R4D solutions adds a critical perspective and develops capacity among the participating researchers. All those involved in the Agricultural Innovation Marketplace contribute greatly to the strengthening of national research capacities in Latin America, the Caribbean, and Africa.

Bill & Melinda Gates Foundation

"At the Bill & Melinda Gates Foundation, our vision is an agricultural transformation led by smallholder farmers who are empowered with the knowledge, tools, and technologies to improve their livelihoods, lift their families out of poverty, and contribute to a sustainable global food system. All over the world, we partner with leading organizations and scientists to explore new ways to make agricultural systems work more productively. By investing in agriculture research, we seek to boost the productivity of staple crops and livestock, which millions of smallholder farmers rely on to feed their families and earn an income.

"We believe that South-South collaboration is important for the development of cross-cultural innovation in research and development in Africa, Latin America and the Caribbean. Thus we are pleased to have supported the MKTPlace project since 2011. MKTPlace helps build the capacity of scientists and researchers in developing countries and has successfully launched innovative research in agricultural productivity for a variety of staple and horticultural crops, livestock, improved agronomic technologies, natural resource management, and new "added value" agricultural products, for example, the processing of honey and mushrooms for income generation.

"Gender empowerment is crucial in development and 26% of the researchers submitting proposals have been women. Other evidence of project success includes: over 2,100 experts trained, 1116 germplasm exchanges, and 174 new products, technologies, or services have been developed. Additionally, 106 events (workshops, fora, etc.) have been held, promoting collaboration and knowledge exchange. MKTPlace has reviewed 793 proposals in 31 African and 21 Latin American and Caribbean countries with, to date, 82 projects selected for funding. The success of these initiatives helps to leverage additional donor funding to support the on-going exchange of ideas and research.
"In line with our commitment to fostering breakthrough discoveries in scientific research and technology, the Bill & Melinda Gates Foundation recognizes the importance of the MKTPlace project. We believe that the most successful of the 82 projects funded to date should be scaled in order to reach smallholder farmers, improve productivity, nutrition and income. To support such scale-up efforts, the Bill & Melinda Gates Foundation, along with other partners, is supporting a follow-on project, the M-Boss project, with an additional USD7 million."

UC DAVIS

The University of California Davis (UC Davis) is one of the world's leading cross-disciplinary research and teaching institutions. UC Davis has four colleges (Agricultural and Environmental Sciences, Biological Sciences, Engineering, Letters and Science); six professional schools (Education, Law, Management, Medicine, Veterinary Medicine and the Betty Irene Moore School of Nursing); 104 undergraduate majors; and 96 graduate programs. UC Davis is the top-ranked university in the world for agriculture and veterinary medicine and one of the top 10 public universities in the nation.

UC Davis intends to produce a better world, healthier lives, and an improved standard of living for everyone by addressing critical issues related to agriculture, food systems, the environment, and human and social sciences through research, education, and outreach. For example, the UC Davis World Food Center, opened in 2013, is reimagining the role of science in our lives and bridging agriculture, health and nutrition sciences and policy in new ways. The center works to address food and agricultural challenges throughout the world by serving as a focal point for deepening and broadening the university's collaboration with partners, convening leaders to shape strategy and policy, and connecting research to society and the marketplace.

The goal of the UC Davis-MKTPlace partnership is to establish partnerships between UC Davis researchers and the MKTPlace project co-leaders to support the solutions to specific problems that arise during project implementation and that the co-leaders are not able to solve otherwise. The target group includes co-leaders from research for development projects already funded by the MKTPlace in Latin America and the Caribbean, as well as Embrapa co-leaders.
A committee co-chaired by UC Davis and the MKTPlace is in charge of the overall coordination and execution of the initiative. Criteria for project approval will include identification of a clear and present need, well-defined and achievable objectives, appropriate methodology, well-articulated project impacts, and a good fit between MKTPlace project co-leaders and their UC Davis counterparts.

The UC Davis-MKTPlace partnership is co-financed by UC Davis, IFAD, and the MKTPlace. The contributions of UC Davis and the MKTPlace will support the participation of the researchers, the use of office space and premises, the provision of related facilities, administrative services and laboratories.

Making it work

The activities required to put the MKTPlace to work varied considerably and ranged from setting up guidelines for proposal presentation and evaluation, project selection, fund disbursement, and monitoring and evaluation activities, to setting up governance meetings, reporting to partners, and organizing policy dialogue and knowledge sharing events and communications.

To lead these activities, a lean project coordination unit (PCU) was set up. This PCU was organized with a multi-skills team strongly supported by information and communications technology (ICT) and with financial expertise. It was envisioned and set up at the Secretariat for International Affairs of Embrapa, at its headquarters in Brasília. As the MKTPlace was designed to foster collaborations initially with Embrapa, this was a natural choice for the location of the unit, which was comprised of full-time Embrapa researchers coordinating the activities, Embrapa support staff (administration and finance), and MKTPlace-hired senior financial and operational consultants.

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Major information technology support has been provided by a company contracted to build a site and a specific online platform to support the various activities and processes. This route was chosen to maintain the partnership's own identity and to avoid conflicts with any of the partners and with Embrapa's own policies and systems.

The requirements of different partners who made financial contributions to the MKTPlace demanded a creative financial architecture which was satisfied by the engagement, as the MKTPlace financial agent, of a well-established foundation, the Arthur Bernardes Foundation (Funarbe, www.funarbe.org.br) in Brazil. Required legal agreements between Embrapa and Funarbe, as well as between partners and the foundation, counted on experienced legal offices.

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2.3.

THE MKTPLACE PILLARS

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The three pillars of the MKTPlace, policy dialogue, knowledge sharing and management, and collaborative research for development projects, are complementary to each other and solidly cemented with an innovative financial architecture, which caters to the needs of the different partners.

Policy Dialogues

Dialogues, and particularly policy dialogues, are extremely important for international partnerships because they play a crucial role in the decision-making process. Through this mechanism, different members of a partnership focus on an issue from their own perspectives and are able to discuss the same matter from different points of view, bringing to their attention issues and situations that might not have been considered before; it is also through policy dialogues that trust and transparency are built and strengthened, and this improves the effectiveness and commitment and benefits the partnership as a whole and their partners individually.

Policy dialogue in three dimensions

The MKTPlace has tentatively divided its policy dialogues into three types: direct organization and participation, direct participation in third-party dialogues, and indirect participation. Though these, initiative is shaped, disseminated, and fine-tuned.

1. **Direct Organization and Participation** is characterized by the active participation of the governance and/or PCU in policy dialogues organized and attended by themselves. It is mainly around the MKTPlace *fora* that the Steering Committee meets to discuss relevant issues regarding the MKTPlace, its challenges, and next steps.
2. **Direct Participation in Third-Party Dialogues** is illustrated by the launch of the MKTPlace in the "Dialogue Brazil-Africa on Food

Security, Fighting Hunger and Rural Development" seminar held in Brasilia, Brazil, in 2010. Another example occurred in 2011, when the Platform was extended to the Latin American and Caribbean region and the LAC-Brazil Agricultural Innovation MKTPlace was launched at the *Encontro de Ministros de Agricultura das Américas*, a policy dialogue held by the Inter-American Institute for Cooperation on Agriculture (IICA) in Costa Rica.

3. **Indirect Participation** is when the MKTPlace is included indirectly in other policy dialogues, and the initiative is usually mentioned or discussed by actors other than MKTPlace team members. An example of this latter type was the Global Hunger Event in 2012, held in London and hosted by the British and Brazilian governments. Senior British and Brazilian authorities discussed the MKTPlace as a reference in the Brazilian strategy of food security.

The MKTPlace experience suggests that direct participation in policy dialogues has been the most effective means of gathering strategic and financial support.

Challenges

In these eight years since the initial discussions that led to the establishment of the MKTPlace, it has been possible to identify several challenges during policy dialogues; however, three of them seem to deserve special recognition: strategic alignment of goals and interests; participation/inclusion in broader, high level dialogues; and faddism.

The strategic alignment of partners to the MKTPlace goals and vice versa has been essential for the longevity of the initiative; through these dialogues the MKTPlace and its partners improved not only their relationships but also policies and strategies to achieve individual and mutual goals. To illustrate the need to accommodate and align the MKTPlace to the needs of a specific


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member, ensuring at the same time that the overall goals of the initiative are maintained, when the Bill & Melinda Gates Foundation joined the MKTPlace in 2012, its strategy specified crops and countries (Ethiopia, Tanzania, Ghana, Burkina Faso, Mali, Nigeria, Uganda) to be supported with their financial contribution. In order for the call for project proposals to follow the previously agreed coverage (all African countries), it was necessary to have resources from other partners complement those coming from the Gates Foundation.

The increasing international recognition of the MKTPlace due to its initial positive results has brought a new challenge: the inclusion of the MKTPlace into broader,

high-level policy dialogues such as G7, G20, G77, WTO conferences, etc.; this is not trivial and requires additional resources and internal political support.

A last issue that can be considered a significant challenge is faddism in international relations and international cooperation. The MKTPlace is considered to have medium- to long-term results; the process of proposal formulation, project implementation, and the outcomes of the project require a certain time and a minimum of stability. The fluctuation observed in Brazil in terms of support to South–South cooperation in the past few years is a good example of this faddism, which is not supportive of medium and long-term initiatives.

Knowledge Sharing and Knowledge Management

The knowledge management and knowledge sharing pillar is composed mainly of communication tools and events for presentation and discussion of ideas and concepts, proposals, and results.

The communication strategies adopted by the MKTPlace aim to build new relationships and strengthen existing partnerships through policy dialogues focused on two different groups:

1. African, Latin-American, and Caribbean researchers and
2. Worldwide stakeholders interested in agricultural research for development.

The MKTPlace's communication architecture is composed of its website, online system, and other communication assets aiming to provide a satisfactory performance and information disclosure, such as institutional e-mail and social media, among others.

Communication Tools

Website

The website is the main tool used for communication; its target-audience is agricultural researchers from countries in Africa, Latin America, and the Caribbean with Brazil. Information regarding the MKTPlace as a whole and projects is available on the website, which is also used for stocktaking of capacity-building events, publication of news and its selection processes, policy dialogues, and other relevant issues. Part of the MKTPlace's accountability is provided through the availability to the public of project events and progress reports and external evaluations are also found on the website.

The online system

Linked to the website, the MKTPlace's online system is the most important tool regarding its internal functioning. It was built for researchers interested in being part of the MKTPlace and those who are already part as project co-leaders. In this system, the researchers are able to create a profile where they provide their professional information and areas of interest in agricultural research, and this profile is available to other researchers registered in the system. Once in the system, the researchers are able to use a matchmaking mechanism designed to facilitate their search and invitation to other researchers to join them in writing their proposals as co-leaders. It is also through the system that the proposals and reports are written and submitted, and pre-proposals and proposals are evaluated by the Steering Committee members.

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Fora: content & implementation

The role of the *fora* within the MKTPlace

The *fora* are considered a key management tool and a face-to-face event for the MKTPlace. They have been establishing a floor to consolidate the virtually organized partnerships linking researchers from Africa, LAC, and Brazil. Specifically, the *fora* have the following objectives:

- Foster knowledge sharing between AR4D professionals/practitioners from Africa, LAC, and Brazil;
- Provide opportunities for learning

from current co-leaders of MKTPlace projects;

- Provide opportunities for co-leaders from finishing/under-implementation MKTPlace projects to share knowledge with co-leaders from MKTPlace projects which are about to start;
- Provide support in the implementation of MKTPlace projects;
- Discuss mechanisms and options to support the scaling up of successful projects; and
- Strengthen capacity in project implementation and scaling up or scaling out.

The *fora* were meant and indisputably turned out to be the main MKTPlace event. They were intended to further a multidimensional dialogue concurrently (through the participation of researchers, research and development institutes, academia, MKTPlace partners, policy-makers, decision-makers) and to strengthen the MKTPlace footprint: joint knowledge building in AR4D, which was pragmatically rephrased later, by a participant of the 2015 Forum as "**learning together how to make science for something.**"

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The *fora* are very dynamic, interactive, and participatory occasions, tailored for everyone involved in the MKTPlace to, in a given moment, take the helm. MKTPlace partners have the opportunity (and the floor) to express their impressions, expectations, requirements and limits, and to get real-time feedback. Participants, in their turn, present, discuss, and also get instant feedback on ideas, projects, results, and follow-up plans. The *fora* are equally an opportunity to level up the acquaintance with and to clear doubts on duties regarding project-reporting, funding issues, contracts, and other routine tasks. Additionally, it is at the *fora*, considering that the MKTPlace community is gathered, that the opportunity to run thematic workshops on potential problem-generating, as well as on challenging topics, is seized.

Therefore, the meetings are very special moments to invite the management of partner institutions as well as stakeholders not yet on board but who could substantially increase MKTPlace's robustness.

The framework of the *fora*

There are several reasons why research and development organizations engaged more and more with participatory approaches for institutional knowledge sharing, planning, and implementation: one is to efficiently dialog with partners, the civil society, and next users to meet their claims. Another reason was the emerging trend in the knowledge management field to go beyond considering explicit expert knowledge and to value the tacit knowledge of all staff as a crucial input for creating solutions and increasing the efficiency of the organizations. This went along with the realization, not only by development organizations, that knowledge creation cycles were increasingly rapid and that professionals – from researchers to administrators and managers – needed to adopt horizontal ways of working together as a mean to respond more effectively to fast-changing opportunities and challenges in an increasingly complex landscape of research and development.

Today, this increase in speed and complexity of knowledge creation sparks opportunities for rural innovation. Thus, the role of knowledge sharing practitioners became facilitating and optimizing people's interactions and collaborative processes within a learning-orientated environment. It is in this context that organizations started to open up their meeting design and agendas to become more inclusive and participatory. Some key success factors of those meetings are:

- The clarity of the meeting organizers about the objectives and expected outcomes, and their clear formulation and communication to participants prior to the meeting;
- The careful design of different sessions that correspond to each of the objectives, using a diversity of knowledge sharing tools and methods, and taking into account the characteristics and the number of participants;


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- The involvement of one or several experienced facilitators, including former or current project co-leaders throughout the process, who ensure adequate meeting design and moderation and who can lead the group towards its best thinking and decision making;
- The time and importance that goes into strong logistical support (meeting-room size and set-up; breaks and lunches that maximize interaction; communication with participants before, during and after, to mention only a few).

In the context of the *fora*, the triangular, North-South-South, aspect of the MKTPlace provides a perfect environment for designing participatory face-to-face meetings. While most of the collaboration between researchers from Brazil, Africa, and Latin America & the Caribbean happens virtually, this moment of face-to-face interaction turned out to be crucial to create the bonds that are necessary to ensure successful collaboration among partners throughout the project implementation.

The *fora* are considered a key KS/KM tool of the MKTPlace, and they have been adjusting and evolving over time. The main goals of the *fora* have been the exchange of ideas and experiences among individuals and institutions in order to foster new ideas, facilitate project implementation, and enhance the initiative. However, as the pool of participants changed over the years, from applicants and early project implementers to senior and former project implementers, adjustments were made to optimize these goals. Capacity-strengthening activities were included to foster and facilitate proposal preparation and project implementation, sessions were designed to identify and discuss risks and bottlenecks, and field visits were introduced to enhance experience in Brazilian agriculture and value chains.

A Snapshot of the four *fora*

Agricultural Innovation MKTPlace - *Fora*							
Year	**Invitees**	**Agenda**	**Duration**	**Number of Attendees**	**Capacity Strengthening**	**Field Visit**	**Communication Tools Used During the Fora**
2010	Researchers from Africa and Brazil	**Chat show:** partners and invited guests discussed how support for agriculture was changing in 2010; **An Afro-Brazilian Café:** participants shared views on the future of agricultural research; **Proposal "Speed" Rounds:** participants discussed the strengths of their proposals; **Proposal and Pre-proposal Peer Assists:** participants received proposal feedback from their peers	2 days	150	-	-	E-mail; MKTPlace website
2012	Researchers from Africa, Brazil, Latin America and the Caribbean	**Testimonials** from 3 project co-leaders; **Learning Events** on the four thematic areas of the MKTPlace; **Proposal Experience Sharing;**	3 days	180	**Training Sessions** on proposal writing and implementation	-	E-mail; MKTPlace website; Facebook; Blog; Twitter; Live streaming
2014	Researchers from Africa, Brazil, Latin America and the Caribbean	**Poster Sessions:** co-leaders presented a poster with their project results; **The challenge of scaling up project achievements; Identifying key project implementation challenges**; **The challenge of germplasm exchange**;	3 days	78	**Workshops** on project implementation and scaling up project results	Research Center	E-mail; MKTPlace website; Facebook
2015	Researchers from Africa, Brazil, Latin America and the Caribbean	**Poster Sessions:** co-leaders presented a poster with their project results; **360° Rounds:** co-leaders shared the results of their projects; **Coaching Session:** co-leaders discussed experiences and expectations; **Golden Keys:** co-leaders shared experiences on project implementation;	3 days	106	**Workshops** on project implementation and scaling up project results	Integrated Farm	E-mail; MKTPlace website; Facebook

! Annex I presents details on the organization of the *fora*.

Capacity Strengthening Workshops

Considering that the *fora* are meant, and therefore designed, for knowledge sharing and building, they deliberately acquire an intense and motivating learning atmosphere. In addition, the *fora* are the unique occasion in the MKTPlace when all co-leaders are gathered at once. Therefore, there is no opportunity more suitable than the *fora* to run workshops on potential trouble-generating issues and on challenging topics.

In the first workshops, the content focused on improving capacities, on writing competitive proposals, and on aspects related to project kick-off, as the first MKTPlace projects were just starting or about to start. As projects started to run, the MKTPlace realized that different co-leaders in different rounds of the call for proposals in Africa, Latin America, the Caribbean, and Brazil repeatedly faced the same few problems, such as visa issuing for a visiting co-leader, germplasm exchange for projects that needed it, and flow of funds. In addition to these very tangible difficulties, it became evident that poor and uneven communication between co-leaders was unfortunately systemic across projects, growing in some cases into a quagmire that was blocking if not all, certainly most of the timely decisions. Therefore, from the third *Forum* onwards, there were workshops dedicated to these topics, focused on project management but also strong on the value of true personal commitment to the project and to the fellow co-leader, as well as proactivity, as keys to success.


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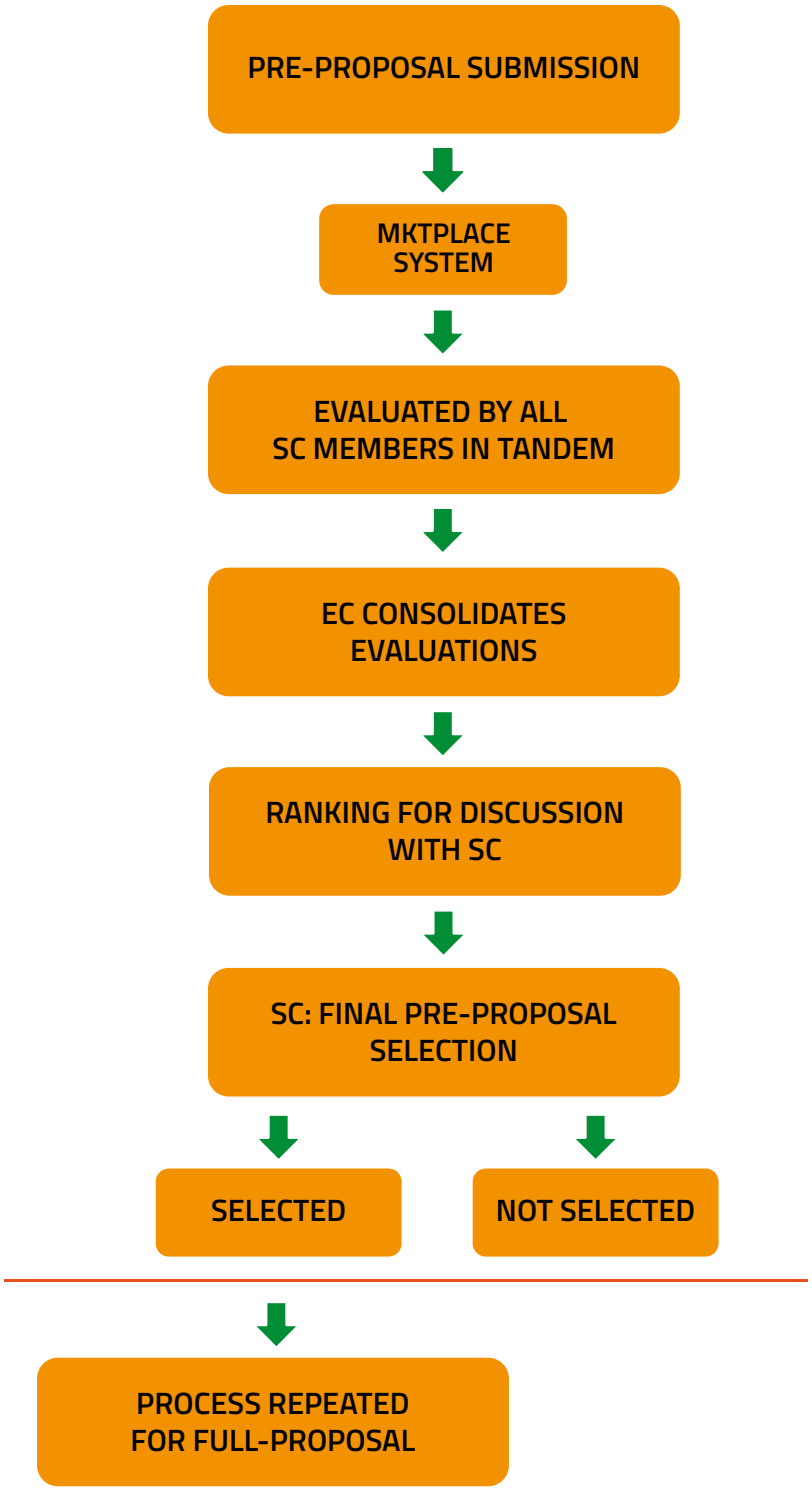
Simultaneously, as the first MKTPlace projects progressed towards their end, a question that had appeared in the discussions of the MKTPlace coordination since the beginning started popping up among senior project co-leaders: what's next? Foreseeing it, workshops were organized focusing on achieved results, lessons learnt, and on how the network and knowledge built and strengthened by the MKTPlace added to each one's competence, self-confidence, and willingness to take on bigger challenges. Possibilities of scaling up and following up, which were always monitored, later became a central hot topic at these workshops.

Collaborative Research for Development Projects – Matchmaking for Innovation

Competitive funding of collaborative research for development (R4D) projects is the major pillar of the MKTPlace regarding the amount of resources and activities involved. Since the MKTPlace launch, projects have been selected through a two-stage competitive process and conducted through open calls for proposals following a calendar agreed upon by the MKTPlace



Steering Committee (SC). The duration period of the calls considers the various institutional calendars, legal obligations, and needs of the researchers.

The first stage of the process is an open call for pre-proposals widely disseminated through various communication channels, including the MKTPlace's website and networks of the various partners. The proposals must have two co-leaders representing a partnership between an African or LAC-based organization and an Embrapa research center. An intense matchmaking work is conducted at this stage in order to catalyze partnerships among geographically distant colleagues, often unknown to each other, and to maximize the number of pre-proposals submitted. Once the period for submission of pre-proposals is closed, evaluations are conducted by the SC, which selects and invites the best subset of pre-proposals to participate in the second stage of the competitive process by submitting full proposals for further consideration. These full proposals undergo another round of evaluation by the SC, which then selects the most suitable subset of proposals for funding.

Submission and evaluation processes for pre-proposals and full proposals

Pre and full proposals are presented following specific guidelines elaborated by the EC and approved by the SC. Briefly, proposals must be submitted under one of the four thematic areas predefined by the SC. Budgets cannot exceed USD 80,000 per project and the duration is a maximum of two years. The processes of proposal elaboration, submission, and evaluation are conducted online through a web-based system developed specifically for the MKTPlace (www.mktplace.org).

The proposals are assessed in accordance with guidelines and predefined criteria approved by the SC. Proposal assessment criteria include problem definition, objectives, methodology, innovation, expected results, potential development impact, and growth potential/sustainability. Proposal budgets are evaluated for compliance with specific limits and potential discrepancies. In order to maximize the use of the funds for project activities, a few limits have been placed for the budget percentage, which allows student stipends, field personnel, consultancies, and administrative costs. Salaries are not allowed and should be represented as "in-kind" contribution of the project partner institution.

After selection, a tripartite legal document is signed between the institution in Africa or LAC, Embrapa, and Funarbe (fiscal agent) in order to implement the projects. Funds are disbursed according to the project budget. Funds for the African or LAC institution are sent by Funarbe directly to the institution and managed by the African or LAC project co-leader according to their institutional rules for procurement of goods and services. Funds for Embrapa research centers are managed directly by the Brazilian co-leader through a project sub-account at Funarbe and according to Funarbe's rules for procurement of goods and services. Technical reports are due annually, together with financial reports from the African or LAC institutions. Financial reports for the Embrapa research centers are generated directly by Funarbe.

Summary of the Calls for Proposals – CFP

2010-11 MKTPlace Call for Proposals

The first open call for pre-proposals was launched for the African continent in May 2010. There was a peculiarity regarding this first call: all pre-proposals were eventually invited to present full proposals. This was due to new funds made available to the MKTPlace during a KS event gathering all participants (funded or not) in this call. In order to take advantage of the discussions conducted during the event, the SC decided to invite all pre- and full proposal proponents that had not been initially funded to refine and present full proposals to a closed round of

Thematic areas

1. Productivity-Enhancing Technologies:

• Development of land productivity enhancement and saving technologies, including: *approaches to biological nitrogen fixation and utilization; improvement of livestock breeds and health; molecular and conventional approaches for genetic improvement and adaptation of crop plants, arable crops, fruit trees and forestry species; biodiversity management; molecular characterization and conservation of plant genetic resources; soil, water, and crop management; storage technologies; and food processing.*

• Development of technologies for adaptation and mitigation of climate change, including: *forestry and agroforestry options for fighting desertification, poverty, and hunger; livestock distribution, health, and productivity, plant breeding, crop management, water harvesting and management techniques, soil reclamation, and re-forestation.*

2. Natural Resource Management Improvements

• Generation of natural resource and soil conservation technologies with reduced drudgery and low cost, including: *regeneration of degraded lands, conservation agriculture including soil and water conservation, usage of legumes in cropping systems, crop rotation techniques, and development of organic farming.*

3. Policy, Institutional and Market Strengthening and Knowledge Management:

• Strategies for knowledge management and improved access to knowledge and information by stakeholders in the commodity chain, including:

policy analysis; market studies; ICT for development; communication strategies for farmers, policy makers, and private sector; gender sensitivity in communication; and trade in agricultural commodities.

• Strategies and policies for institutional strengthening, including:

capacity building, re-engineering institutions, engagement of private sector in agriculture, innovation systems, and engagement of government support in research.

4. Smallholder and Poverty-Alleviation Targeted Technologies:

• Development of technologies and strategies/systems to reduce poverty and hunger, including:

improvement of cash flow for farmers, of information flow, and of agricultural lending systems.

• Mechanization appropriate for smallholders.

evaluations and selection. Four projects, in addition to the six previously selected, were then selected for funding, totaling 10 funded projects in the 2010/2011 call.

Call in a snapshot:

4	thematic areas covered
61	pre-proposals received
30%	of female participation
10	projects approved – 6 countries and 10 Embrapa centers

2011-12 MKTPlace Call for Proposals

A total of 20 proposals for Africa and 5 for LAC were selected for funding. So far, this was the largest CFP, considering the number of projects and pre-proposals and the amount of resources disbursed.

Call in a snapshot:

4	thematic areas covered
194	pre-proposals received
24%	of female participation
25	projects approved – 14 countries and 16 Embrapa centers

2012-13 MKTPlace Call for Proposals

A total of 11 proposals for Africa and 3 for LAC were selected for funding.

Call in a snapshot:

4	thematic areas covered
139	pre-proposals received
17%	of female participation
14	projects approved – 8 countries and 8 Embrapa centers

2013-14 MKTPlace Call for Proposals

The 2014 call for proposals started in December 2013 and ended in August 2014 with the selection of 16 new projects for funding. Differently from what had happened in the last calls for proposals, the 2014 call for proposals process was adjusted by Embrapa, with the inclusion of the pre-proposals in Embrapa's program management system. Due to this adjustment, the selection process was delayed.

A total of 103 pre-proposals were received, 81 from Africa and 22 from LAC; 53 were invited to present full proposals, and out of these submissions, 16 were selected and approved for funding by the Steering Committee: 11 in Africa and 5 in LAC.

Call in a snapshot:

3	thematic areas covered
103	pre-proposals received
22%	of female participation
16	projects approved – 8 countries and 13 Embrapa centers

2014-15 MKTPlace Call for Proposals

The 2014-2015 call for proposals was launched on November 2014. From March to April 2015, Embrapa and the SC evaluated the full proposals with the selection and announcement of 11 new projects, on May 2015, 11 in Africa and 5 in LAC. The highest number of proposals was submitted by Ethiopia.

A total of 107 pre-proposals were received; 51 from Africa and 9 from LAC were invited to present full proposals.

Call in a snapshot:

3	thematic areas covered
107	pre-proposals received
45%	of female participation
11	projects approved – 9 countries and 7 Embrapa centers

2015-16 MKTPlace Call for Proposals

The 2015-16 call for proposals was launched in November and finished in May 2016 with the approval of six projects, four from LAC (Mexico, Chile and Colombia) and two from Africa (Uganda). A total of 190 pre-proposals were received, 153 from Africa, compared to the 74 received the previous year, and 37 from LAC, compared to 33 from the last call. As in previous years, most of the proposals from Africa were from east Africa, specifically from Ethiopia (31). An interesting fact of this call for proposals is that it included a broader participation of African countries, including Cape Verde (6 proposals), Gabon (2), Lesotho (1), and Zambia (1), which had not participated before. For LAC, the pattern was about the same as 2014-15 CFP, with 13 out of the 37 proposals from Colombia.

Call in a snapshot:

4	thematic areas covered
190	pre-proposals received
33%	of female participation
6	projects approved – 4 countries and 5 Embrapa centers

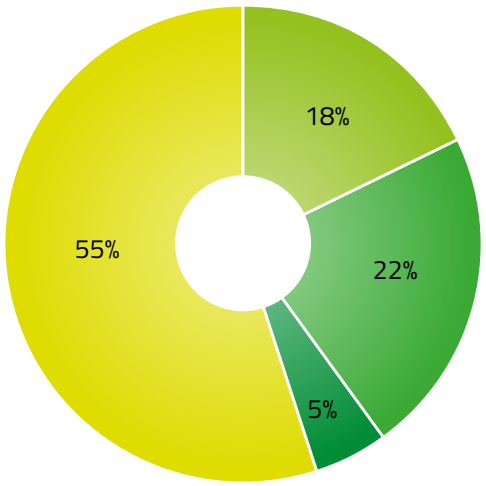
MKTPlace Call for Proposals – Cumulative Data

Currently, 82 projects have been supported, 64 in Africa and 18 in Latin America and the Caribbean, involving 13 and 10 countries respectively. Around 45% of the approved proposals are concentrated around the thematic area "Productivity-Enhancing Technologies." Eighty-two technical officers participate in the projects in Brazil, and the same number of researchers in African, Latin American and Caribbean countries. Altogether, 53 different organizations are involved in the approved projects.

Since the beginning of the MKTPlace, the following countries have submitted one or more projects: i) **Africa:** Algeria, Angola, Benin, Botswana, Burkina Faso, Cameroon, Chad, Congo, Cape Verde, Democratic Republic of Congo, Egypt, Ethiopia, Gabon, Ghana, Ivory Coast, Mali, Mozambique, Madagascar, Malawi, Nigeria, Kenya, Lesotho, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe. ii) **LAC:** Argentina, Bolivia, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Ecuador, Grenada, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Suriname, Uruguay, and Venezuela.

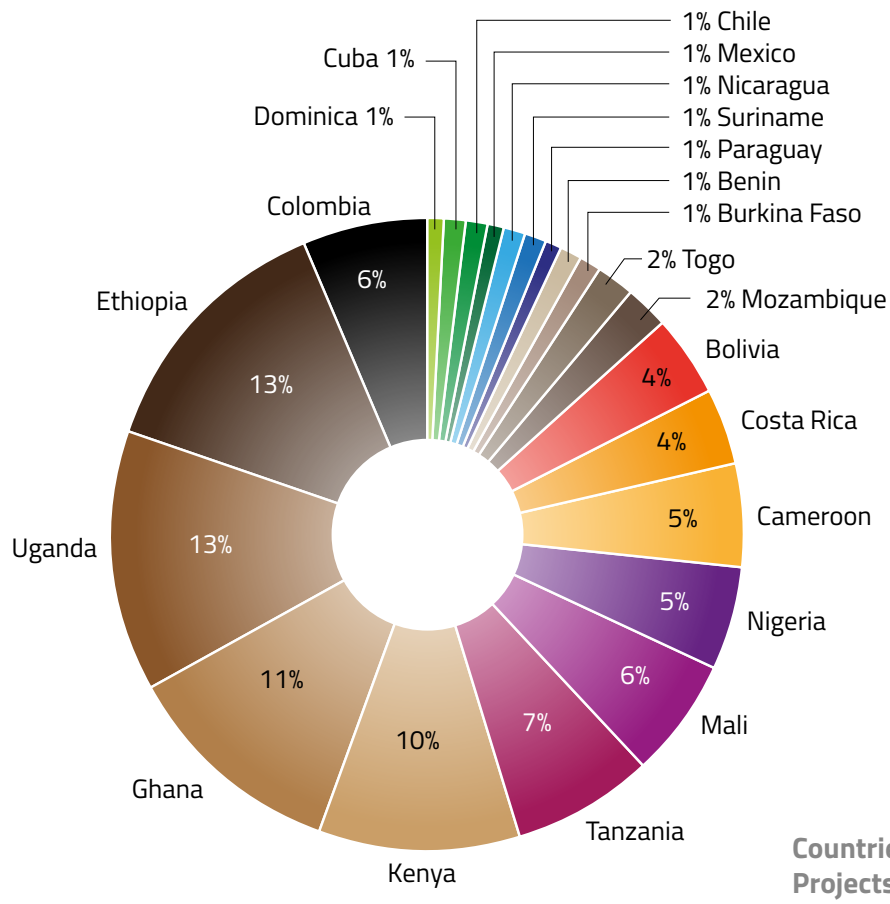
Sixty-six percent of the proposals received and 76% of approved projects come from six countries (Ethiopia, Nigeria, Tanzania, Uganda, Ghana, and Kenya), i.e. 19% of the participants.

Project per thematic area



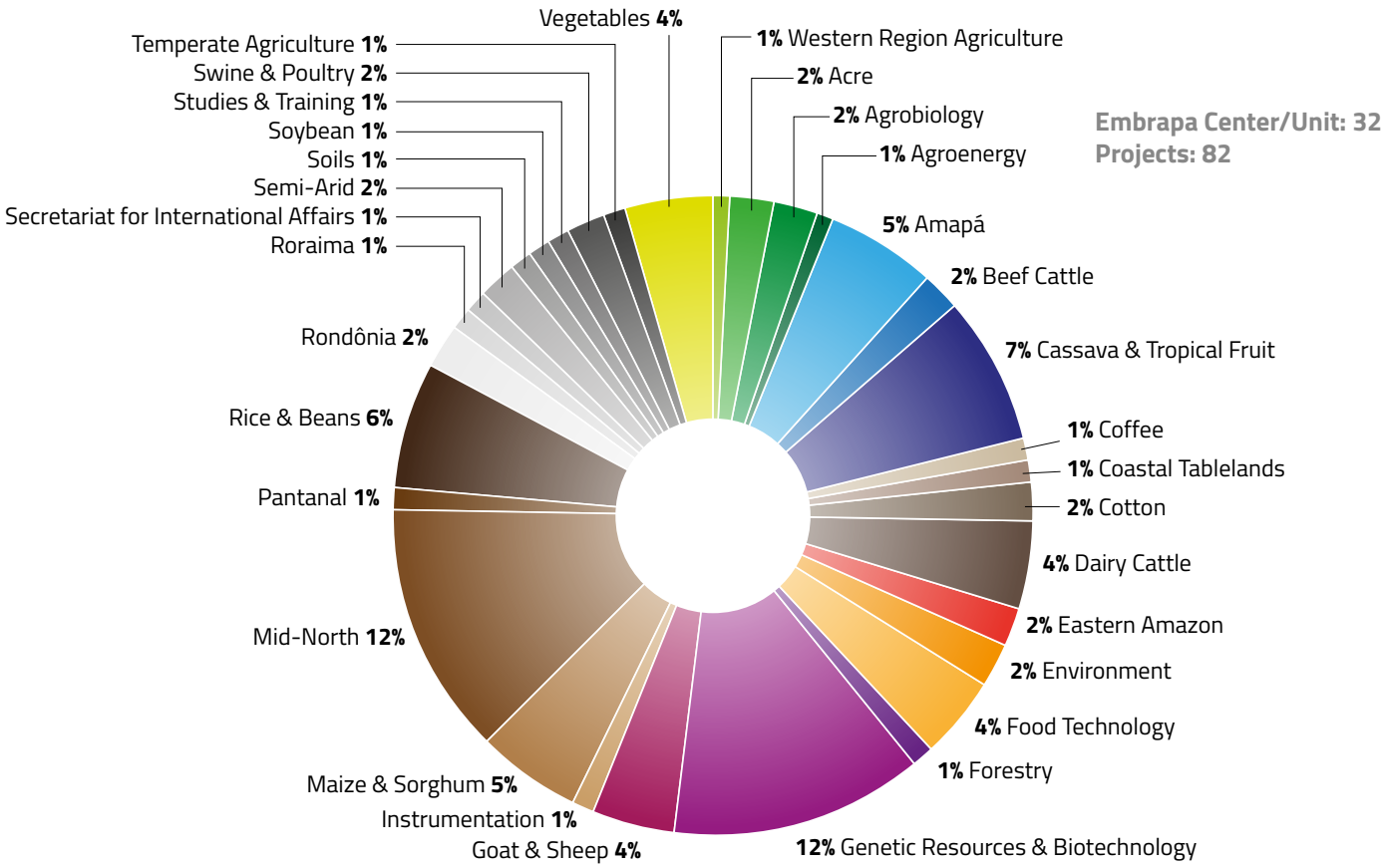
- Productivity Enhancing Technologies
- Policy, Institutional and Market Strengthening and Knowledge Management
- Smallholder and Poverty-Alleviation Targeted Technologies
- Nature Resource Management Improvement

Project per country



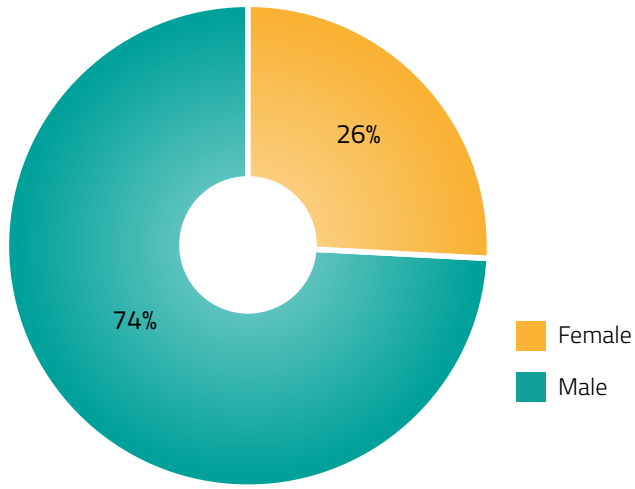
Countries: 22
Projects: 82

Project per Embrapa Center/Unit



Embrapa Center/Unit: 32
Projects: 82

Project coordination per gender



Project Outputs – MKTPlace in Numbers

A summary of results and outcomes achieved by the first 40 finalized projects (as of August 2016) are available below and represent three years of activities.

174	technologies, products & services generated
96	items of specific knowledge generated
1116	germplasm exchanges
2191	experts trained
4	major KS events with participants from 40 countries
106	events organized
129	publications
26%	female participation in pre-proposal submissions

Technologies, Products and Services

Projects have developed 137 technologies and products, such as technology for development of Bt-plant extract biopesticide, low-head Hydram pumps developed and adapted to smallholder farmer conditions, methods for merging and analyzing molecular data generated by different facilities, new technologies and policies for honey production, and *Rizhobium* (*Bradyrhizobium*) inoculation in cowpea.

Most of the products are related to breeding and conservation: chicken genomic information data to be deposited in a public database, *in situ* conservation status of four *Arachis* species determined, 10 GMO cowpea lines evaluated.

The MKTPlace projects have generated 37 services for smallholder producers, and some of them have short-term impacts and results, such as those listed below:

Degraded rangelands rehabilitated using planned grazing and animal impact;

Installation of Ram pumps, design of matching irrigation systems, and technical backstopping services provided to beneficiary farmers.

Training and Technical Visits

The training and technical visits involved over 2,100 people. These activities were very important since the human capital base (researchers and farmers) had to be prepared for an increasingly competitive market. These events focused on knowledge management and sharing to develop different skills needed to respond to promising activities associated with high-value cropping systems, market-oriented crops and more remunerative land-use practices, and reductions in production costs for traditional cereal crops.

Knowledge Generated

Ninety-six identifiable knowledge products were generated. The findings were very diverse, including the identification that cotton volatiles are responsible for the attraction of a major pest (*Antonomus grandis*), documentation of levels of soil and groundwater pesticide contamination in Togo, development of a procedure to enable the assisted migration of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peanut wild relatives, a smallholder goat system simulation model, and elaboration of a protocol for the development of efficient Bt-plant extract biopesticide.

These results are important since investment in basic research (which generates this type of technology) is unattractive and usually done only by the public sector due to the inappropriateness of results, uncertainty as to the success of the research, and indivisibility of investments.

Germplasm Exchange

More than 1100 accessions or samples of germplasm adapted to tropical agriculture from several species/breeds (approximately 280 materials/yr) were exchanged. These accessions are of strategic importance to the recipient countries.

The exchange involved ten countries; Ethiopia, Kenya, Nigeria, Uganda, Tanzania, and Cameroon were the recipients in Africa; Brazil, French Guyana, Colombia, and Bolivia were the recipients in Latin America. The exchanged species were Napier grass, cotton, peanut, coffee, banana, rice, lentil, cowpea chicken, cassava, nematode, pepper, bean, and tomato.

Events Organized

The project co-leaders organized 106 major events. These events were hosted in 19 countries and involved researchers, farmers, media, agro-processors, economists, journalists, policy makers, and rural communities, among others.

Publications

The MKTPlace projects have produced over 129 technical publications, including scientific papers, theses, books, videos, and manuscripts.

Some Research for Development Project Highlights

1. Healthier Poultry Production at a Low Price

Poultry production is a major agricultural activity in Ethiopia, and antibiotics are usually added to poultry feed. Through the project "Screening of indigenous strains of lactic acid bacteria for development of a high quality probiotic for poultry", 36 types of probiotic bacteria were isolated and tested. Two new types were identified. The selected probiotics can replace the use of antibiotics, thus enhancing poultry productivity, technical knowledge, and profitability of smallholders.

2. Say Goodbye to Nitrogen Fertilizers

Cowpea is one of the most important crops on the continent; it occupies approximately 11 million hectares of African lands. A new technology for *Rhizobium* inoculation in cowpea was developed, and this has huge potential for Africa since it can reduce or eliminate the use of nitrogen fertilizer in cowpea. This was possible due to the project "Enhancing smallholder cowpea legume production using *Rhizobium* inoculants," implemented in Ghana.

Cowpea in Ghana

3. Saved By the Bug: Insects to Be Used As Feed

The most expensive part of production costs in poultry and fish industries is the feed. The project "Farming insects as possible alternative for high protein feed for chicken and fish in Cameroon and Brazil" uses insects as a natural source of protein, which benefits small and medium farmers by lowering production costs, increasing their income, and also contributing to environmental sustainability.

Potato harvest in Bolivia

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4. Potato School: Empowering Farmers for Organic Production

To empower farmers with technological, commercial, and farm administration skills, as well as with ownership and leadership, for the production of native potatoes, three farmer field schools (FFS) were created in the framework of the project "Sovereignty: empowering farmers by strengthening capacities for organic production and commercialization of unique native potatoes" in Bolivia. Forty-five families were benefited directly. Tuber yield and quality improved significantly, and some families are starting to make it to the market. In each FFS community, a homegrown bio-input unit was built to produce bio-inputs, and the surpluses from these started to be purchased by non-FFS neighbors; the business is already self-sustained.

5. Got Milk? Empowerment and Training in Dairy Production

The empowerment and training of farmers in sanitary milking methods and marketing techniques led the farmers to create a dairy cooperative society. The cooperative is formed by more than 1,000 farmers who have planted more than 100 acres of different feeds, acquired new cattle breeds, and are running a campaign for artificial insemination. This was created during the implementation of the project "Facilitating local level dairy innovation platforms for smallholder farmers," in Kenya.

Farmers transferring bee colonies in Ethiopia

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6. Working Bees: Food Security in Ethiopia

New technologies and policy for honey production in Ethiopia were developed, in addition to the training of 80 farmers on queen bee rearing techniques in order to select good breeds to improve the quality and the amount of honey production; the training continued through peer-to-peer networking. This was possible due to the project "Bee diversity and honey production for food security", which also drew attention to an important issue in the country: the food security brought by honey produced by the beekeepers.

7. Fly Away! Prediction of a Pest in Rice Fields

The stalk-eyed fly (*Diopsis sp.*) is a major pest in rice-growing ecosystems in Africa. Through the project "Towards genetic improvement of farmer preferred rice varieties resistant to the stalk-eyed fly (*Diopsis sp.*): an emerging pest in rain-fed irrigated rice growing ecosystems", the appearance of the flies was monitored and quantified, and a mathematical model to predict the occurrence of the fly was developed. In addition, a preventive breeding program for regions where the fly might become an issue was developed.

8. All In One: An Integrated System For Food Production

In Ghana, the construction of a low-cost small food production system has become a hub for organically produced fruits, vegetables, and grains. In addition, the production includes poultry and fish. This system was created in the project "Increased smallholder food production through implementation of water conserving aquaponics-based food systems" and is increasing food production greatly.

9. Breaking Barriers: Discussion and Regulation of GMOs in Africa and Brazil

There are a lot of barriers for the acceptance of genetically modified organisms (GMOs) in Africa. The project "Confidence-building in modern biotechnology: optimizing best communication practices and policies to guide deployment of biotech/GM crops in Africa and Brazil" opened the discussion on the implementation, regulation, and production of transgenics and contributed to the regulation of GMOs in Africa through policy dialogues and the sharing of the Brazilian experience.

10. Spa Day: Intensive Care of Cassava and Plantain Through New Thermotherapy Chambers

Cassava and plantains are under threat from systemic diseases in Latin America. To address this issue in Colombia, through the project "Thermotherapy chamber: a rapid and eco-efficient method for cleaning and massive propagation of cassava and plantain seed," four thermotherapy chambers were built to improve the availability of commercial genotype seeds for farmers enhancing the crops health and production efficiency. These results were disseminated in Costa Rica, Paraguay, and El Salvador.

Discussions on GMO regulation at Embrapa Soja, Brazil

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2.4

FINANCIAL ARCHITECTURE


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The financial architecture, the cement for the three pillars, was designed to guarantee that the objectives of the MKTPlace and its various partners would be reached. Among the existing options for making the MKTPlace operational, a Foundation that would work as a fiscal agent was chosen, since this arrangement would provide the flexibility needed to allow the partners, with their differing strategies and policies, to work in alignment to achieve the goals of the MKTPlace.

The entity chosen to manage the financial resources of the MKTPlace was the Arthur Bernardes Foundation (Funarbe), due to its experience and the fact that it has an online system for managing and monitoring projects.

A Cooperation Agreement between Embrapa and Funarbe was signed to establish the conditions needed for implementation, aiming to define, plan, coordinate, and execute the actions of the MKTPlace. To implement this Agreement, it was obligatory to sign additional and subsidiary legal instruments with the partner institutions.

Within the partnership model adopted by the MKTPlace, the way that partners can contribute may take place in two ways: in cash (financial contributions) and/or in kind (contributing goods and services).

Ever since the MKTPlace was implemented, the initiative has relied on various partners, all of which are public institutions, with the exception of the Bill & Melinda Gates Foundation, which is private. All have contributed the resources needed for it to be put into operation.

Funarbe is responsible for administering the financial resources of the MKTPlace, observing the provisions made in the legal instruments signed individually with each partner, primarily by respecting the rules imposed for their applicability. Due to the institutional arrangement of the MKTPlace, it was necessary to create a Project Coordination Unit (PCU), situated in the Secretariat for International Affairs of Embrapa, which has a suitable physical structure and a highly qualified team. The PCU is responsible for coordinating and managing the actions of the MKTPlace, as well as supplying all the technical and operational support for international partners. It also works in close collaboration with Funarbe, ensuring that common standards and procedures are upheld in relation to financial management. This group is formed by technical staff from Embrapa and includes a specialized team of consultants.

! Annex II presents the details of how the MKTPlace is operationalized.

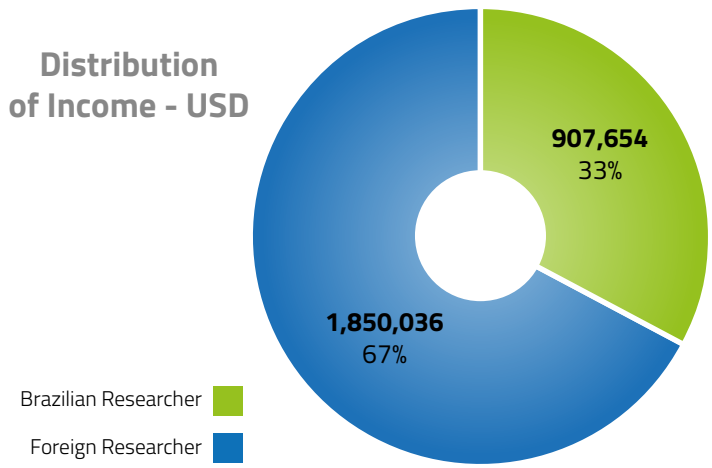
Participation of the FARA and the IICA

The MKTPlace has the active participation of the IICA and of the FARA on the Executive Committee and in the support for event organization, which takes place nearly every year (in *fora*, workshops, seminars, technical meetings, for example). This support includes matters relating to paying expenses incurred in travel and per diems for national and foreign participants, supervising the monitoring and evaluation of projects (in LAC and Africa), and administering and operationalizing the MKTPlace as a whole.

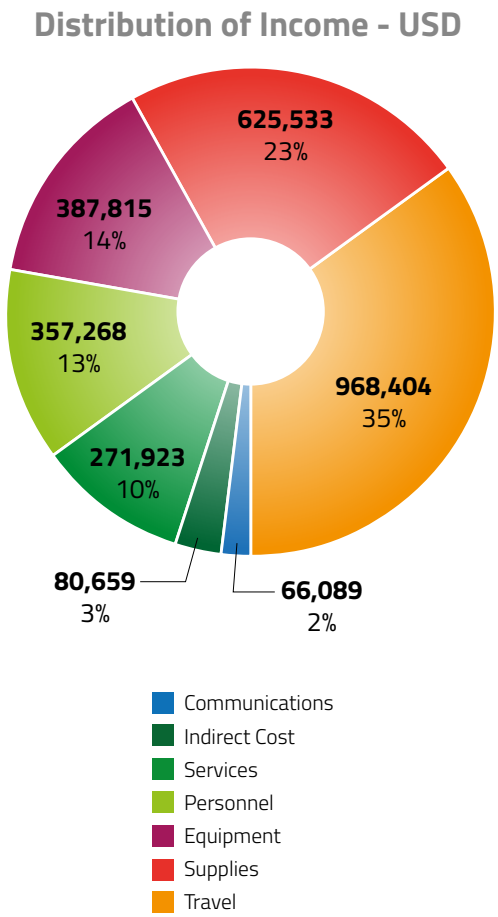
The resources that are needed for the IICA and the FARA to be able to carry out actions come from the MKTPlace partners. Any expenditure, be it from the IICA or from the FARA, will have to be backed by the respective legal instruments.

Analysis of Financial Reports – A Sample

Below, information is presented on how the financial execution of the first 35 completed projects took place, noting that the analysis presented took as its basis only the quantitative data. The resources used were distributed as follows, by executor:



The chart below shows the total value made available, by category of expenditure, for the projects.



The survey showed that 83% of the completed research projects reached an execution of more than 90% of the total assigned resources, thus demonstrating efficiency in the execution of the projects. Only 7% of income was not used.

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Bottlenecks and Challenges

Currency exchange

In recent years, according to Brazil's Central Bank data, there has been an evolution in the exchange rate for dollars and the real: the dollar rose by 102% in relation to the real between December 2010 and August 2015.

In the case of the MKTPlace, the outlay from partners has come in foreign currency, and when these monies are deposited in the specific Funarbe account, they are transformed into the Brazilian real, using the exchange rate of that day. However, most project disbursements are carried out in dollars by means of funding research projects abroad via the beneficiary institution.

From April 2012 to February 2015, there was an exchange-related loss, in some cases, of about 12% in relation to the value in foreign currency that the donor had transferred. Depending on the volume of resources received, that loss may have been highly significant.

Transfer of project resources

Of the 82 projects financed by the MKTPlace, only two have seen hold-ups in the transfer of resources to the beneficiary institutions, due to their own bureaucratic problems.

In one of these, co-leaders reported that the resources for project execution were retained by a government body in the beneficiary country. The problem was resolved after discussions, the resource was released, and a new working plan was established.

In the other case, resource transfer was not possible at first because the beneficiary institution apparently did not have administrative mechanisms to cope with foreign funds, and there was the practice of applying very high overheads. After negotiation and internal adjustments, the institution itself started to manage the resources. However, there was a considerable delay in starting project activities.

Models for the MKTPlace agreements are available at www.mktplace.org.

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2.5.

ADJUSTING & EVOLVING

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Monitoring & Evaluation (M&E): strategies and procedures

M&E activities are powerful tools to assist decision-making processes reach desired impacts. The main objective of M&E activities is to allow the analysis of strategies, learning, and adjustment of actions. There is a growing interest in this theme aimed at the consolidation of systems that can identify weak and strong points, systematize information, and suggest improvements to reach program goals. Additionally, M&E can be essential management tools for the design, implementation, and control of public policies, ensuring the quality of these programs.

Due to its growth and the significant number of projects in progress, the MKTPlace has intensified efforts to strengthen M&E through the adoption of different strategies, operations, and activities. Initially, M&E activities were mainly based on external control and carried out in response to partners' expectations. More recently, efforts have been initiated at the project level, emphasizing internal learning, knowledge generation, and strengthening of partnerships among the partners involved.

This new strategy reflects additional efforts in monitoring activities during project implementation. Continuous review allows interventions and adjustments to be applied regularly. Thus, the operational strategy of the MKTPlace M&E is based on the following pillars: knowledge, partnership, and accountability.

Knowledge is a key element and functions as an integrating agent among all participants of the MKTPlace. The constant sharing of information between SC members and the project co-leaders allows mutual learning and continuous improvement. The results obtained from the M&E activities are used to support the improvement of internal processes, such as legal instruments, the online system for the submission of proposals, and the MKTPlace website. Moreover, the challenges and difficulties reported by the participants (e.g., project reports or the assessment of the *fora*), can be used to define the themes to be discussed in capacity building activities.

Partnership is another fundamental aspect. The active participation of SC members in M&E activities allows more participation in determining the objectives to be achieved. Considering that research projects are co-led by two researchers – one resident in Africa or in Latin America or the Caribbean and the other in Brazil – the participation of MKTPlace partners is crucial to carry out *in situ* monitoring in foreign institutions.

The third pillar, accountability, aims to achieve maximum transparency in the management and sharing of information. To this end, the MKTPlace M&E activities are guided by transparency, equality, competence, and honesty.

Program monitoring and project monitoring

MKTPlace M&E activities are mainly conducted in two dimensions: focus on the program as a whole and focus on the research projects. Both, the program and the research projects are subject to financial control and external audits carried out by Funarbe.

Considering the Program as a whole, several M&E activities are conducted, including independent evaluations, financial monitoring (Funarbe), publishing of scientific papers in peer-review journals, dissertations, theses, meetings and reports drawn up by the EC.

The external evaluation of the Program is carried out by independent experts. The PCU supports these activities by providing documents, database access, discussions, and interviews to be included in the report generated by the evaluators. The evaluation aims to assess the MKTPlace as a whole, based on the three pillars: policy dialogue, knowledge sharing/ knowledge management, and research for development projects. More specifically, the evaluations comprise the stocktaking exercise, considering management, governance, transparency issues, technical procedures, impacts, reasons of success, and lessons learned. One of the main challenges of the process is the development of the terms of reference (ToR). The ToR takes into consideration the milestones and outputs provided in the agreements signed with each partner.

In addition, the feedback received from policy dialogues, partners, project co-leaders, and annual and final reports are important learning mechanisms for guiding the adjustment of MKTPlace procedures. Other efforts are internally generated, such as progress reports and case studies, as well as briefing notes from external organizations. All of these are helpful sources for monitoring and learning in addressing results and potential impacts.

Focusing on research projects, M&E activities involve the selection process of pre and full proposals, annual and final reports, *in situ* visits, the *fora* and real-time evaluation, and workshops.

Research project proposals are submitted through a careful and competitive selection process, based on criteria defined by the SC. Additionally, as part of contractual obligations, co-leaders of the funded projects have to submit technical and financial reports to the MKTPlace, one report after the first year (annual report) and another when project activities are completed (final report). Financial reports are only requested from African, Latin American, and Caribbean institutions, since the financial reports for Embrapa researchers are generated directly by the Funarbe system. The reports are reviewed by the PCU and, if necessary, co-leaders are contacted for clarification or adjustments. The project performance assessments usually generate findings and recommendations that can be used by other projects funded by the MKTPlace.

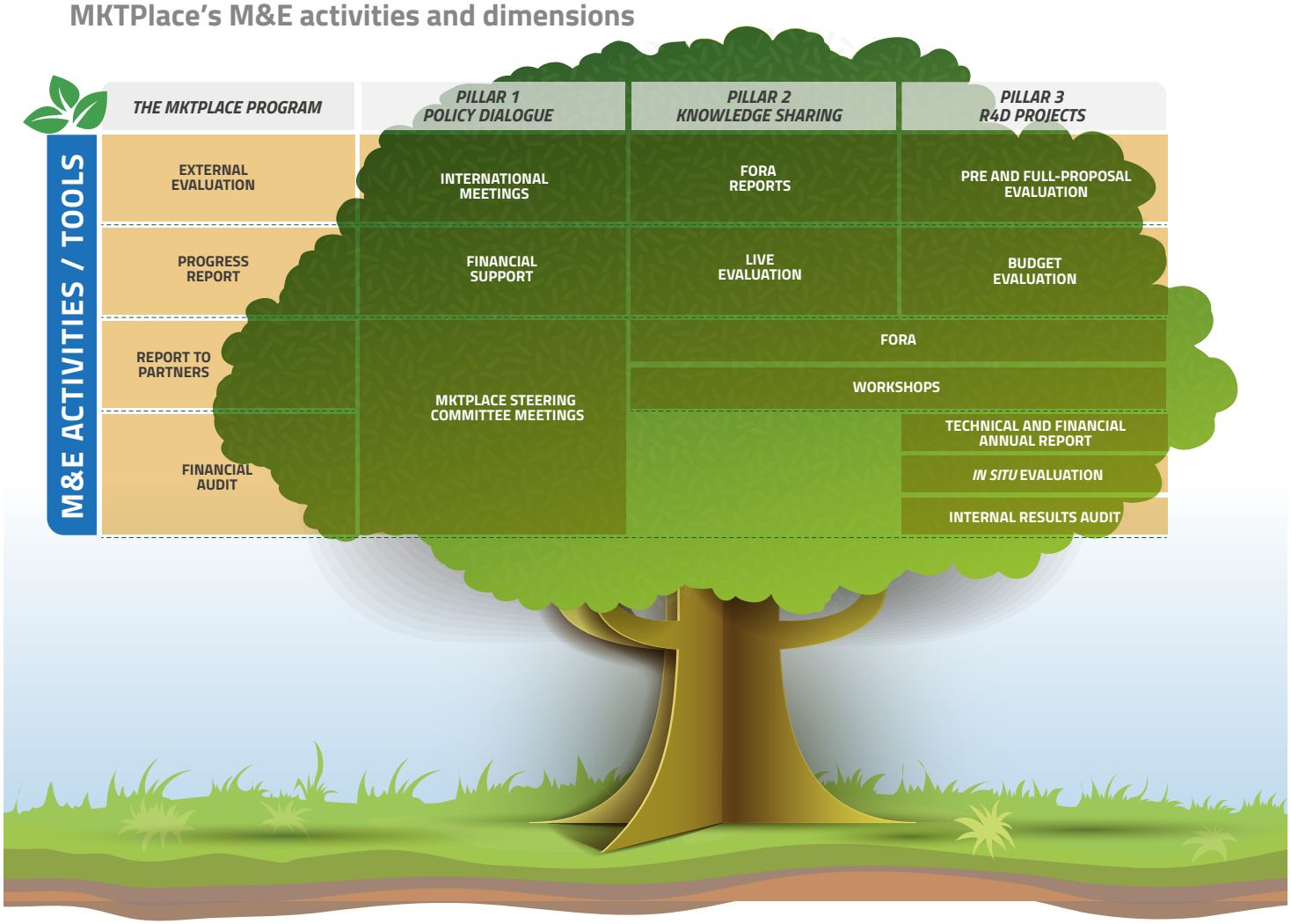
In situ M&E visits are conducted by the PCU at Embrapa centers and also by FARA at African institutions. M&E activities for LAC projects are being strengthened according to the procedures used in Africa. During the visits, the co-leaders are invited to present their results. Based on a review of the projects, reports, interviews, and analysis of the project implementation, the evaluators suggest modifications and support to alleviate the difficulties encountered by the researchers. As a product of these activities, reports are generated that cover the levels of activity implementation, the constraints and challenges faced by research partners, and the lessons that can be

learned and shared with all partners of the MKTPlace and also other initiatives. In these reports, recommendations are made in order to improve or adjust specific issues identified in each project.

Another important M&E tool is the *fora*. These events are held on a regular basis, and the aim is mainly to share experiences among project co-leaders. At the end of each *forum*, there is an evaluation of the event and of the MKTPlace activities through a real-time feedback voting system. The evaluation results are generated automatically and shared with the participants in real time. Subsequently, comprehensive reports of the activities of the *forum* are generated, including this assessment.

The M&E tools, aligned to the organizational design, allow the MKTPlace committee's expectations to be achieved, ensure compliance with contractual commitments, and allow monitoring of the performance of activities, reducing the partners' uncertainties. All documents generated by the M&E actions are shared on the MKTPlace website, aiming for greater transparency of information. A control panel is on the making.

MKTPlace's M&E activities and dimensions

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2.6.

THE MKTPLACE GOALS WITHIN THE GLOBAL GOALS

The goals of the MKTPlace fit eight of the Global Goals pictured in the table.

The UN Sustainable Development Goals (Global Goals) and the MKTPlace thematic areas

UN Global Goals	1) Productivity Enhancing Technologies
1 - End poverty in all its forms everywhere.	
2 - End Hunger, achieve food security and improved nutrition and promote sustainable agriculture.	
6 - Ensure availability and sustainable management of water and sanitation for all.	
10 - Reduce inequality within and among countries.	
12 - Ensure sustainable consumption and production patterns.	12.3 – By 2030 halve per capita global food waste and reduce food losses along production chains
15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	15.6 - Ensure equitable sharing of benefits arising from the use of genetic resources, and promote appropriate access to genetic resources
16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	
17 - Strengthen the means of implementation and revitalize the global partnership for sustainable development.	

MKTPlace Thematic Areas

2) Natural Resource Management Improvements	3) Policy, Institutional and Market Strengthening and Knowledge Management	4) Smallholder and Poverty-Alleviation Targeted Technologies
2.4 – By 2030 ensure sustainable food production systems and resilient agricultural practices. 2.a – Increase investment in rural infrastructure, agricultural research. Technology development and gene banks to enhance agricultural productive capacity.	1.a - Create policy frameworks to support poverty eradication actions 1.b – Ensure mobilization of resources to provide means for developing countries and implement programs to end poverty	
	2.5 – By 2020 maintain genetic diversity of seeds, plants animals and related species	2.1 – End hunger by 2030 and ensure access by all people to safe, nutritious and sufficient food. 2.3 – By 2030 double agricultural productivity and incomes of small-scale food producers.
6.5 – By 2030 implement integrated water resources management 6.6 – By 2020 protect and restore water-related ecosystems 6.b - Support and strengthen the participation of local communities for improving water and sanitation management	6.a – By 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities	
	10.2 – By 2030 empower and promote the social, economic and political inclusion of all peoples 10.a – Implement special and differential treatment for developing countries, in accordance with WTO agreements	
12.2 - By 2030 achieve sustainable management and efficient use of natural resources 12.4 - By 2020 achieve environmentally sound management of chemicals and all wastes 12.5 - By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse	12.a – Support developing countries to strengthen their scientific and technological capacities	
15.5 - Take action to reduce degradation of natural habitat and loss of biodiversity, and by 2020 prevent the extinction of threatened species 15.a - Mobilize and significantly increase from all sources financial resources to conserve and sustainably use biodiversity and ecosystems		
	16.6 Develop effective, accountable and transparent institutions at all levels	
	17.3 - Mobilize additional financial resources for developing countries from multiple sources 17.6 – Enhance North-south, South-South and triangular regional and international cooperation 17.7 – Promote development of environmentally sound technologies to developing countries 17.9 – Enhance international support for implementing effective capacity building in developing countries to support implementation of all GGs 17.14 Enhance policy coherence for sustainable development	17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development

A Sample of MKTPlace-supported Projects and the Global Goals:

Most MKTPlace projects can also be directly linked to one or more of the UN goals. For example:

Project 157, entitled "Enhancing rice and maize production by smallholders using bacteria-plant extract biopesticide," aims to help smallholder farmers through better production of rice and maize, thus contributing to ending hunger and promoting sustainable agriculture (goal 1).

Project 1004, titled "Exchange of banana and plantain (Musa spp.) varieties and hybrids between IITA and Embrapa - widening the genetic base for the development of new cultivars and direct use by farmers," consists of the exchange of plant varieties, for further development of better cultivars. The exchange between IITA and Embrapa certainly fortified and revitalized global partnerships, contributing to sustainable development (goal 17).

2.7.

AND NOW WHAT?
Next steps and lessons learned

Next Steps

The MKTPlace has been assessed by partners, researchers, and evaluators as a successful initiative. Several years after implementation, the founders and supporters of the initiative need to think, and indeed have been thinking, about its next steps. Should the MKTPlace do more of the same, should it change gradually, or should there be total disruption, Schumpeter style? Should it go global, beyond Brazil, as the purveyor of knowledge and technology? Should it follow the trend (and fad) of social governance based on ICT?

The MKTPlace has been successful in its original purpose, but it should be seen as an important step on the pathway to both short- and long-term impact. Positive impact should be measured with solid indicators of agricultural development. Nonetheless, it is generally very difficult to isolate the specific effects of any individual initiative, such as a MKTPlace project, on the overall agricultural development of a region. It takes time for impact to reveal itself in measurable ways, as exemplified by agricultural

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development in Brazil. It took Brazil about 50 years and a large set of different initiatives, from structuring agricultural research to credit and other incentives to entrepreneurship, to take the country from being a net importer of food to a major agricultural exporter with high levels of agricultural production and productivity.

Short-term benefits do take place as well, but they are often more difficult to measure or gauge than long-term impacts. For example, the MKTPlace has fostered the creation of research networks between Embrapa and African and LAC institutions that were not there before. Similarly, Embrapa, African, and LAC institutions have gained knowledge and more expertise on each other's agricultural issues, improving their capacity to innovate and contribute to agricultural development in general. MKTPlace projects also leveraged, in several cases, the mobilization of new funds and policy discussions on agricultural issues. All these are impacts that serve as building blocks for agricultural development.

What makes the MKTPlace successful?

Several factors, taken together, have been responsible for the success of the MKTPlace as a model South-South cooperation mechanism.

- *Bulk up*

  The MKTPlace has been organized to function as a market of demands and solutions, where different stakeholders can safely, simply, and in an organized manner achieve what they need. The bulk treatment of the demand simplifies and speeds up the response.

- *Lean and mean*

  A lean and stable management team has been essential to guarantee the quality and efficiency of processes, avoid unnecessary bureaucracy, eliminate waste, reduce cost, shorten the timelines, and maintain a vivid memory of the initiative to prevent unnecessary revisiting of issues and decisions. The designed processes focus on aspects of execution since they reduce the variation and amplify the standardization, avoid inadequate planning, build and maintain in-house expertise, outsource the right level of activities, and promote transparency on resources and other metrics. In other words, do the work right, and do the right work.

- *Call the shots*

  Empowerment of researchers through direct accessibility to and management of financial resources and fostering of peer-to-peer interaction have been critical success factors. Additionally, the demand for cooperation is set by the researcher, i.e., it is bottom up process.

- *Pacta sunt servanda* (agreements must be kept)

  Agreed upon, clear, and achievable targets gauged by realistic institutional capacities strongly contributed to the fulfillment of commitments and to strengthened credibility of the MKTPlace.

- *Collaborate and Compete*

  A collaborative and competitive system based on key and well-defined criteria has been essential to guarantee quality projects are selected, implemented, and completed, with scalable results.

The MKTPlace was designed to support policy dialogues, knowledge sharing and a set of relatively small R4D projects, the key element of interest to researchers. The latter aimed to generate a critical mass of diverse knowledge that could be shared, adopted, and scaled up, leading to impact on agricultural development. Having over 80 projects funded and 40 completed (as of 2016), this critical mass has been reached, as project results with high scale-up potential started to become apparent through the various monitoring and evaluation mechanisms.

Discussions with partners – and their highly important belief, trust, and support for the MKTPlace – led to the design and implementation of a next step or phase, dubbed the M-BoSs. This second phase was designed to select MKTPlace projects considered to have high potential to be scaled up and out, due to results achieved in phase 1. Thus, another link in the complex pathway to impact chain was created.

In M-BoSs, selected MKTPlace project co-leaders are invited to present new larger proposals (3 years and with budgets of USD 300,000-700,000) focused on applying results from their projects in agricultural development. This new phase is in the early stages of implementation, but this sort of "pipeline" model, which has long-term commitment and vision as its basis, seems to be an interesting format for paving the way to impact. Key supporters of this pipeline model, the Bill and Melinda Gates Foundation and UK's DFID, deserve special recognition from the international development community for their vision.

The existing pipeline model has not limited founders and partners in their thinking process in terms of the MKTPlace and its next steps. In fact, thinking outside the box is the common feature of many discussions, and ideas that try to address the questions asked above are in different stages of discussion.

Constant monitoring and a critical review of what is being done in relation to what is expected to happen with agriculture and institutions in the future are of the essence to ensure that initiatives and funds are serving their purposes optimally. For instance, it is becoming clearer than ever that in order to avoid obsolescence, institutions, especially public ones, will have to adapt fairly quickly to the new possibilities

that information technology and social networks offer. They constantly have to recreate themselves, detecting faint signals from the different "markets." And the design of new initiatives will have to change, adapt, and respond to the different demands while, at the same time, innovating.

Today, the MKTPlace, together with the M-BoSs, seems to be a promising pipeline model for S-S cooperation. The implementation of the MKTPlace has allowed all partners to learn and grow; this knowledge is shared below.

Lessons Learned

Several lessons have been learned through the design and implementation of the MKTPlace, which might be applicable to the design and implementation of other S-S cooperation initiatives. These lessons have been derived from monitoring and evaluation field visits in Africa and Brazil, recommendations made by MKTPlace *fora* participants, external evaluation, and PCU experience, shared with partners through implementation reports. Since the beginning of its activities, the MKTPlace has stood out as an important and innovative mechanism to promote S-S cooperation, due to several factors including the large number of participating researchers and projects approved, the significant contribution of resources mobilized, and the promising results of its research projects. The leading role played by the PCU at Embrapa in the implementation of the program, including resource mobilization, ensuring that all partners were permanently consulted and heard, strengthened governance and allowed the program to grow, possibly establishing a new cooperation model.

MKTPlace consolidation as a relevant international collaboration mechanism in agriculture and livestock has been evident since the **World Bank Innovation Award** received in its early years and because it had been an important part of the agenda of discussions among senior international leaders; this high-level support has been essential to the initiative.

Broadly speaking and for didactic purposes, these lessons can be categorized into four groups: Governance, Knowledge Sharing and Management, Finance, and Operation.

Governance

- An inclusive and transparent governance structure, agreed upon by partners, with clear roles, objectives, and shared responsibilities, has been essential to the MKTPlace success, leading to a high buy-in from partners, simplification of processes, and minimization of conflicts.
- Catering to the needs of partners over time due to their evolving strategies and policies has also been of paramount importance to the sustainability of the program.
- M&E exercises should be undertaken routinely for the program and for commissioned projects, as well to assess the level of progress, discuss bottlenecks with implementers, and report to MKTPlace partners.

Knowledge Sharing and Management

- The *fora* are not a space for lectures, long presentations, or long plenary discussions. Oral presentations supported by slideshows have been kept to a minimum to make space for conversations. The same is true for breaks, including meals, whose duration was always designed to allow good and relaxed interaction and leave room for active discussion and networking.
- It has been considered important to ensure enough time for South-South project co-leaders to get to know each other, build trust, work together, and analyze results and lessons learned. Dynamic and not too busy programs, as well as competent facilitation, were crucial to achieve this. Progressing from *forum* to *forum*, and based on participants' feedback through real-time evaluation, the organizing team has increasingly been giving time to work in pairs.
- Perfectly paired with the knowledge sharing principle, opportunities have been provided for learning to take place between current implementers and current applicants (who are called senior and junior project co-leaders, respectively), which is a real strength of the *fora*. Different formats have been used, such as peer-assists, poster bus-stop sessions, rotating groups to share project proposals or thematic learning events. Additionally, the MKTPlace coordination provided one-on-one support for project implementers.
- The full involvement of a dedicated organizing committee is essential. In addition to Embrapa's staff, staff from partner institutions were involved, as were students and interns from Brazil and abroad. The involvement of students and interns also helps to create a learning environment.

Finance

- Innovative financial architecture schemes need to be developed as the level of funding increases in order to optimize the use of funds and reduce the vulnerability to exchange rate fluctuations.
- A reasonable level of administrative autonomy is essential for good operation of the PCU.
- As an international initiative managed primarily by a national institution, there are challenges, such as the development of tripartite legal agreements, which need to be carefully considered to avoid issues and delays during implementation.
- The national legal basis governing the management of external and foreign resources, as well as each partner's contractual needs, should be clearly determined in order to define the framework of legal documents needed to implement and monitor the program, as well as the level of time and effort from personnel.
- A formal agreement with a fiscal agent (Funarbe) was essential to guarantee the necessary flexibility and accountability of the MKTPlace. In addition, agreements between Embrapa and other partner Brazilian government organizations, such as the Brazilian Cooperation Agency,

and with international organizations, such as FARA and IICA, have been extremely important for the efficient operationalization of certain components of the program.

- Currency volatility needs to be considered upfront during planning, as funds from partners are internalized in Brazil by converting USD or British pounds into Brazilian reais and re-converting into USD once resources need to be sent abroad to fund part of the collaborative projects. Considerable sums of money may be lost during these transactions, depending on exchange rate fluctuations in the time period between internalization and externalization of resources. No definitive solutions have yet been developed to prevent this issue.
- An open, broad base of financial support partners has been very important to the sustainability of the MKTPlace. As different partners commit different amounts of funding in different, sometimes not sequential, time periods, this broad base of supporters allows the initiative to run for longer periods in the absence of continuous funding from individual partners. It also allows for a broader spectrum of fundable projects, as individual partners might be restricted in what they can fund by their institutional policies.
- The MKTPlace funds research-for-development projects of up to USD 80,000 for a period of two years. The choice of a restricted time period for these relatively small-size projects has proven to be a good strategy, as it has allowed the MKTPlace to fund more than 80 projects in a space of about six years, creating a critical mass of successful results to be potentially scaled up, leading to impact in agricultural development.
- The online management of R4D projects allows the MKTPlace model to be adaptable and applicable to other institutions and countries and in different areas of knowledge, such as health and education, among others.

Operations

- Direct and frequent communication among the various stakeholders is essential. This applies to all levels, from the specific projects to the Executive and Steering Committees and is especially important during periods of leadership change in partner institutions to prevent disruption in project implementation and of the MKTPlace as a whole.
- The push made by the partners to mobilize researchers and institutions from specific countries to participate in the MKTPlace calls had a significant impact on the number of proposals submitted per country.
- Transparency in reporting and availability of information for partners is essential to strengthen accountability.
- The online management system has been of critical importance to facilitate contact among researchers and to manage the MKTPlace as a whole, including calls for proposals and project reports.

Additional operational lessons learned that were derived from the

implementation of specific collaborative projects include:

- Prior knowledge of the partner institutions improves the chances of developing a high-quality proposal and, therefore, project approval.
- A broader view of local/regional development issues is needed to ensure the project will fit as part of a future set of development activities.
- Market and community needs should be considered even as early as in the pre-proposal phase to increase the chances of obtaining results that will satisfy producer needs and expectations.
- Project design should involve actors other than researchers, particularly farmers and the local communities. The same applies to pertinent institutions, which should be contacted as early as possible in the design phase. Building required multidisciplinary teams around the proposal increases the chances of success, and the participation of socio-economists is highly desirable.
- The credibility of stakeholders (researchers and institutions) results in important impacts on the expectations and in confidence of resource allocation in the project.
- The leadership profile, experience, and commitment in project management are determining factors for the success of projects and for the mobilization of additional resources.
- Fine-tuning the framework for project results and setting realistic indicators, once projects are approved, are necessary as projects tend to be too ambitious in terms of anticipated impact.
- Pre-defined no-cost extensions add flexibility to project implementation and compensate for delays in fund disbursement, common in Africa and LAC.
- Germplasm exchange is a cumbersome process that requires no less than six months. Therefore, projects which depend on germplasm exchange should initiate arrangements as early as possible.
- Language barriers between co-leaders should be addressed early, during design phases. The development of a communication plan, constant communication, and the use of translation tools freely available on the web are important elements to be considered by co-leaders.
- Simple, straightforward project procedures, autonomy in resource allocation and use, and flexibility are attractive to researchers.
- Constant communication between the parties, including at least one face to face contact, is essential.
- Risk management should be discussed by the implementing team, and viable strategies should be developed early to deal with problems that arise during implementation, while maintaining the coherence of objectives and project activities.
- Small projects need to be linked with bigger programs to help them achieve their targeted outputs/outcomes. Furthermore, they need to think about how to scale up, if results are positive, or consider exit strategies.
- Investing in staff and student development as part of project implementation increases chances of project success.

2.8.

CONCLUDING REMARKS ON THE MKTPLACE

Markets and marketplaces need to have four characteristics to be successful (Roth, 2015):

1 Thick → involves lots of people present at the same time.

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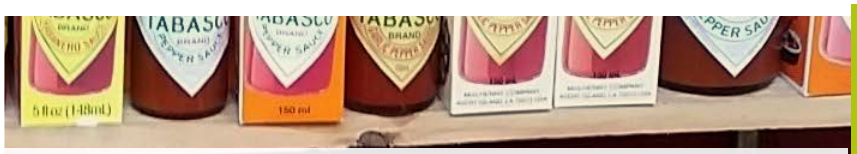
2 Simple → requires constant solving of new problems that are always emerging as marketplaces evolve and being fast enough to attend to the partner's needs.



allows more people at a time and a faster flow of things.

3 Decongested

consists of making it secure to provide information and also allows people to make choices honestly, based on their preferences. Also, it needs to be secure to use money without representing risks, if this is the case.

4 Safe

These four characteristics seem to be present in the MKTPlace, in different levels, procedures, and activities implemented in these last six years, and they perhaps help explain the success story achieved by the MKTPlace in a relatively short period.

In closing, the MKTPlace experience has reinforced the belief that cooperation initiatives, especially those involving research and envisioning measurable impacts in agricultural development, are medium- to long-term investments (>5 years). These investments need long-term commitments, patience, persistence, risk-taking, a critical mass of funding and of projects/initiatives, and ideally, a minimum group of committed individuals who remain involved and maintain the historical perspective of the initiative, to avoid unnecessary interruptions and changes in direction. Paradoxically, these sorts of long-established concepts have to cope increasingly with new models, systems, and ways of doing things that are changing at an unprecedented speed. The challenge for the future will be to unite these old paradigms with the new realities, making full use of all the fast technological advances on one hand while adjusting to the slowly changing nature of certain processes, from biological to political, on the other hand.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2.9. BUILDING ON THE SUCCESS SCALING OUT & UP: M-BOSS

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Why scaling out & up?

There were very promising outcomes in all four MKTPlace thematic areas that, for their potential in positively impacting the current status, should have an opportunity to be scaled out and up. The two first rounds of calls for proposals in the MKTPlace ended up with a portfolio of achievements, which included, to name but a few, good management of degraded rangelands and pesticide leaching; local-level platforms to manage dairy products and forestry landscapes; technologies related to the exploitation of bee diversity, ethanol production, and chicken breeding; and productivity-enhancing technologies for value chains as diverse as cassava, coffee, common beans, cotton, cowpea, maize, millet, mushrooms, Napier grass, pepper, potato, rice, small and large ruminants, swine, and poultry.

These cases of success motivated a general concern (by MKTPlace coordination and partners, African institutions and Embrapa, and especially participants) on the need for their decisive institutionalization as a means for scaling up and being long lasting. Nevertheless, the duration of the MKTPlace projects is rather limited for these ambitions. In this breeding ground, the M-BoSs (**B**uilding **o**n the **S**uccesse**s** of the Africa-Brazil **M**KTPlace) came to light to foster institutional result ownership by African partners and, allowing for long-term collaboration, pave the way for scaling the successes of the MKTPlace up and out.

M-BoSs pictured from inside

Objectives

The aim of M-BoSs is to contribute to the development and sustainability of production systems of key food chains in Africa by strengthening, deepening, and institutionalizing research collaboration between African

and Brazilian institutions. M-BoSs builds on the successes of existing partnerships from the MKTPlace that have the possibility to mature over two years.

M-BoSs specific objectives are:

- To scale up promising results (models, products, policies, or technologies) obtained in MKTPlace-supported AR4D projects;
- To support new impact initiatives through either joint new projects or scaling up/out results obtained from non-MKTPlace supported projects of interest to African countries and Brazil;
- To foster relationships between agricultural scientists in Sub-Saharan Africa and in Brazil, which may have rippling effects or spillover, in the long-term, for scientific collaboration;
- To engage and connect a full range of actors involved in agricultural innovation (research, academia, extension, public and private sector, NGOs, producers, policy makers); and
- To support the development of a mutually agreed upon framework for sustainable Africa-Brazil collaborations.

M-BoSs is expected to effectively address some of the major challenges faced by African countries. The institutional arrangements used by the MKTPlace-supported projects will serve as the initial structure, and these will be expanded to accommodate increases in scale.

Components

M-BoSs is an initiative composed of three pillars:

a. Knowledge sharing

The main instruments of knowledge sharing are the *fora*. They are expected to further the dialogue towards a comprehensive understanding of the M-BoSs principles and commitments, as well as its potential in contributing to more productive and sustainable agriculture and affordable food for Africa. The *fora* will also represent the occasion to study M-BoSs SWOT, aiming at improving its effectiveness and foreseeing scenarios for future interaction. Within M-BoSs *fora*, results will be presented and discussed. Additionally, potential partners and experts on resource mobilization will be invited to attend, as well as international development and cooperation agencies and foundations involved with supporting African agricultural development.

b. Capacity strengthening

Considering the size of the projects supported by M-BoSs, it is recognized that the ability to properly plan, implement, and manage the project is key to its success. Therefore, M-BoSs supports capacity strengthening for these skills as part of the activities within the initiative, as well as an M-BoSs contribution to institutional strengthening. The development of skills in project monitoring and evaluation (M&E) and in entrepreneurship is also foreseen.

These are well understood within M-BoSs as a set of competences needed for the effective delivery and dissemination of results, with their consequent conversion into innovation.

c. Support and implementation of collaborative research for development projects

M-BoSs supports projects in which the ultimate beneficiaries are smallholders and their value chains, as well as direct consumers of the respective goods and services. Projects are expected to range from 300,000 to 700,000 USD, with durations of up to three years. The four following thematic areas, inherited from the MKTPlace, are considered for proposal submission and funding:

- Productivity enhancing technologies;
- Technologies for adaptation and mitigation of the effects of climate change;
- Technologies targeted at smallholders and poverty-alleviation;
- Policy, institutional, and market strengthening and knowledge management.

Governance

To ensure beneficiary participation and ownership, M-BoSs has the following governance set up:

- A joint Oversight and Initiative Selection Committee (OISC) with African (FARA) and Brazilian (Embrapa) participation, including two representatives from each institution. The additional M-BoSs partners also name two representatives each to join OISC. OISC is chaired by Embrapa and is in charge of all executive decisions.
- OISC identifies and invites independent technical peer reviewers to evaluate and issue their advice about the submitted proposals.
- Individual projects rely on tailor-made governance structures, which are presented as part of the proposal. Such structures will have a minimum composition established by OISC, which is expected to be formed by the beneficiary African institution(s), Embrapa, and the operations/administrative handler indicated for the project.
- Broad-project specific advisory committees composed of mostly African community representatives and leadership will serve as a sounding board to the governance of each project, providing input into project implementation.

Partners and Participants

Building on the acquired knowledge and considering the operational similarity between MKTPlace and M-BoSs, the same concept of the platform adopted by the MKTPlace was proposed for M-BoSs. So far, M-BoSs is a partnership among FARA, B&MGF, DFID, and Embrapa. Additional partners might join M-BoSs in the future.

African public or private, governmental or non-governmental research and development organizations, in association with one or more Embrapa units, are the ordinary participants in M-BoSs. Nevertheless, M-BoSs expects other institutions and stakeholders, such as extension services

and farmers' associations, for instance, and also policy makers and market agents on both sides of the Atlantic, to join the teams.

From proposal invitation to project monitoring and evaluation

M-BoSs selects its projects in two stages of competitive rounds of calls for proposals. Potential candidates who have taken part in successfully completed MKTPlace projects are invited to present pre-proposals. Teams from selected pre-proposals are then invited to develop their ideas into full proposals.

Proposal evaluation criteria, defined by M-BoSs OISC, are generally known, such as potential impact; alignment of objectives, methodology, and expected results; and feasibility within the given time and budget. Nevertheless, M-BoSs has three particular features worth highlighting.

As proposals come from MKTPlace projects, M-BoSs can build on excellent performances of previous MKTPlace teams. Good communication and interaction and timely achievement of objectives and delivery of results within MKTPlace raise the M-BoSs project's perspectives of success. The second specificity involves a strong focus on the development expected in submitted proposals. For M-BoSs, results to be scaled up must be applicable and affordable by end users. Thus, dissemination strategy and delivering mechanisms must be efficient and effective, especially concerning the feasibility to reach a large number of end users within the project lifespan or to approach the private sector, if that is the case. Finally, there is a need for a strong institutional architecture behind the project, which should allow for smooth project implementation and robust and sustainable result ownership.


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Once a project is approved and starts to be implemented, it simultaneously becomes monitored, first by its own governance and later by external monitoring and evaluation missions. M-BoSs design allows each individual project to innovate in proposing its domestic governance, believing this is the best tactic to respond to specific challenges that may arise for each project during planning and implementation. Nevertheless, M-BoSs coordinators are always present in project steering bodies to contribute to the regular flow of actions, activities, and work packages within the project and also to turn on the amber lights, when necessary. External monitoring and evaluation concentrates on accompanying the project development, as stated in its management tools, but also and just as importantly, in assessing the several levels (team, institutions, stakeholders, end users) of the project's likely impacts.

Final evaluations, upon project completion, are expected to be strong on impact assessment; quantitative, such as number of beneficiaries, increases in income, and productivity gains; and qualitative, targeted at the project's specific end, which might, for instance, be food and nutrition security, poverty alleviation or the mitigation of effects of climate change.

M-BoSs pictured from outside

The success of M-BoSs is the consequence of the accomplishment of its aims in its three mainstays: knowledge sharing, capacity strengthening, and implementation of collaborative projects. Therefore, its outcomes can easily be drawn from these, e.g., attendance to the *fora*, development of institutions and teams, and number of collaborative projects successfully completed at the end of the funding period. To reach this, OISC will track, measure, and monitor M-BoSs progress towards meeting planned activities, outputs, outcomes, and key milestones using external evaluators. However, as it is for each individual project, such quantitative outcomes are important, but on their own they are insufficient to measure

FARA

Fostering broad-based improvements in agricultural productivity, competitiveness and markets to ensure sustainable growth and improved livelihoods, particularly of smallholder and pastoral enterprises in Africa, is the main objective of FARA. The advent of the M-BoSs program resonates very well with FARA's vision and action across Africa. An important mechanism through which FARA delivers its mandate is partnerships and strategic alliances. The partnership function of FARA has toed the line of innovation systems approach, creating operational innovation platforms. The innovation platforms engage a complete set of stakeholders drawn from a commodity value chain to interact to generate solutions and foster innovations with accompanying socio-economic benefits. The innovation systems approach also uses the business incubation models that ensure that outstanding technologies are packaged into end-line products and jobs are created.

The agricultural innovation systems thinking regards research outcomes as intermediate products that must be translated into development outcomes, viewing research and development as a continuum. M-BoSs ideals provide all the needed complementary activities and processes to translate research into development. FARA looks forward to playing its full continental role to foster the successful delivery of M-BoSs results.

The Bill & Melinda Gates Foundation

The Bill & Melinda Gates Foundation (B&MGF) believes that South-South cooperation is an important strategy for the development of cross-cultural innovation in research and development in the Southern hemisphere. The MKTPlace, co-funded by the B&MGF from 2011 to 2015, helped strengthen capacity and knowledge for scientists and researchers in developing countries. MKTPlace also launched innovative and potentially "game-changing" technologies, best agronomic practices, and necessary research for improving crop productivity and sustainability, income, and the lives of smallholder farmers. Those MKTPlace projects were deemed potentially scalable and capable of advancing their outcomes into innovations, in other words, turning research into development, which is the focus of the current M-BoSs. To support and scale-up the next phase of these successful MKTPlace projects, the B&MGF is funding M-BoSs with the hope and intention of improving the lives of smallholder farmers and growing urban populations in the developing world.

DFID

As part of DFID's agricultural development policy, support for agricultural research and the promotion of innovation are key elements. DFID also pays particular attention to the inclusion and economic empowerment of women, the production of nutritious and safe food, and environmental sustainability.

Building on the experience with the MKTPlace, DFID is pleased to support M-BoSs, which will build on a selection of successful MKTPlace projects. The M-BoSs projects aim to replicate results at scale, influence policy and support access to markets for longer-term sustainability. Brazilian expertise in tropical agriculture has huge potential for increasing agriculture productivity and sustainability in Africa. But promoting agricultural transformation will require a specific focus on market and value chain development to help smallholder farmers increase their yields and respond more effectively to market demand. This is the essence of M-BoSs. Ultimately, we want to see widespread adaptation and uptake of technologies, products, and policies which can increase incomes, productivity, and nutrition security in rural areas, leading to sustainable poverty reduction.

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the whole spectrum of achievements. It is crucial to describe and interpret them qualitatively as well, especially when it comes to impact assessment. In the end, M-BoSs success will come from the level of adoption of models, technologies, products, and policies for better yield, productivity, and food security to farmers and rural families, leading to poverty alleviation.

As in any other initiative, M-BoSs also assumes risks concerning implementation and results, and its governance was designed to develop and implement strategies to effectively mitigate them. Participants' commitment to M-BoSs, particularly institutional commitment, is key to reducing the risks associated with this initiative. Specific examples of potential risks include slow implementation due to limited experience of project leaders with large projects, difficulties in establishing a regular communication flow among the project team, bureaucratic difficulties such as paperwork and delays in the exchange of genetic materials and extended technical visits, variations in the exchange rate, and changes in leadership in involved institutions and projects.

Final thoughts on M-BoSs

M-BoSs has a tough mission: follow up the success of the MKTPlace, which is, paradoxically, its main asset. As promising models, products, policies, or technologies were being generated, anxiety regarding their scaling up and out was also building. Expectations are high, and could not be lower, due to the potential of the MKTPlace results achieved so far and the quality of the teams involved. Result institutionalization and true ownership are needed to smooth and sustain their scaling up and, just as relevant, to induce the establishment of a pipeline of international two-way cooperation between the two largest pieces of tropical land in the world. At the same time, it is urgent to cause impact and as urgent to assess it. Therefore, development actors are very welcome on board. All this expectation is definitely a threat, but what is a threat if not an opportunity to be faced with attitude? That is the plot M-BoSs is starting to write, from farm to fork!


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A FINAL WORD FROM THE EDITORS

South-South Cooperation has been, with more or less emphasis, on the discussion table of the international community for decades – perhaps centuries. Those accustomed to the ways of international relations know that from good ideas and intentions to the desired results and impacts there are enormous layers of formalities, bureaucracy, and a certain amount of trial and error that make implementation of potentially relevant initiatives wither on the vine. When externalities are added, the challenges are enormous!

In this book, we have tried to crystallize in as much detail as possible what we, and we hope the reader too, consider an advanced stage of a successful South-South cooperation model. We aspire it to inspire and serve as a guide to those working in the field.

Risking a broad "word of wisdom" from this experience, it would be that there are no shortcuts to sustainable development. This is a long path that commonly starts with knowledge generation and sharing, which leads to its adoption into rational policies and conscious behaviors, and, finally, results in positive impact. So, long-term political and financial commitments of states, as opposed to governments, and of the international development community are a must.

Our experience has shown and confirmed that it is fundamental to count on a strong, passionate, and dedicated team in order to succeed and push forward a great idea.

Last of all, this is but a strong beginning. The MKTPlace is a live and branching initiative, and the editors hope to report back to readers in the future with a second edition full of new and exciting data and positive impact on the livelihoods of rural populations.

FURTHER READING WITH COMMENTS

The Agricultural Innovation MKTPlace has been used as a model of South-South cooperation and pointed out as reference in several studies and publications, including peer-reviewed papers, briefing notes, and undergraduate and graduate theses.
Some publications including different aspects of the MKTPlace are briefly summarized, and the respective website links are provided.

Agricultural Innovation Marketplace: An Efficient Mechanism for Strengthening South-South Cooperation (in Portuguese)

The paper analyzes the relationship between proponent countries' characteristics and the quantity and quality of pre-proposals submitted to the MKTPlace over the first four rounds in order to identity the factors that might affect proposal submission.

Ferraz, RM; Cajueiro, MEN; Heinrich, AG; Anjos, UG; Mori, SSO; Reifschneider, FJB. Plataforma de Inovação Agropecuária: um mecanismo eficiente para o fortalecimento da cooperação Sul-Sul. **Revista de Política Agrícola**, 23 (2): 91-102, 2014. http://seer.sede.embrapa.br/index.php/RPA/article/view/921/827

Innovative Partnerships for Agricultural Research and Development

The briefing note examines the MKTPlace in Africa, some Brazilian initiatives in South-South cooperation, and the possibility of the EU joining the MKTPlace.

Freitas, A. Innovative partnerships for agricultural research and development: Examining the Africa-Brazil agricultural innovation marketplace. **Briefing Note** 82: Maastricht, ECDPM. November, 2015. 15p. http://ecdpm.org/publications/innovative-partnerships-for-agricultural-research-and-development-africa-brazil/

Agriculture and Sustainable Rural Development: Challenges of International Technical Cooperation (in Portuguese)

The book shows a historical and conceptual view of the subject, reports cases and experiences that illustrate the challenges faced by institutions covering the IICA's first 50 years of uninterrupted activities in Brazil. There is a specific chapter focused on the efforts carried out by Embrapa in Africa and some achievements obtained by the MKTPlace in the first four years.

Otero, MR; Oliveira, MM; Tibúrcio, BA; Ramírez, AR. **Agricultura e desenvolvimento rural sustentável: desafios da cooperação técnica internacional**. Brasília: IICA, 2015. 443p. http://www.iicabr.iica.org.br/wp-content/uploads/2015/04/agricultura_desenvruralsust.pdf

Undergraduate Essay Supported by MKTPlace

The PCU in Brasilia supported three undergraduate essays, one in journalism and two in international affairs. All of them are related to discussion about international cooperation with focus on the operational elements of the MKTPlace.

The study compares the traditional procedures used by the Brazilian Agency of Cooperation (ABC) and the MKTPlace.

The traditional instruments of technical cooperation and the Africa-Brazil Agricultural Innovation Marketplace (In Portuguese)

The essay investigated if the level of development (social, economic, political, technological, scientific) of the Latin American and Caribbean countries influences the elaboration and development (quantitatively and qualitatively) of the technical cooperation research projects with Brazil through the MKTPlace.

Agricultural Innovation Marketplace: A case study on cooperation between Brazil, Latin America and the Caribbean (In Portuguese)

The report describes the main channel of communication of the MKTPlace and evaluates its functionality based on the opinion of users.
http://bdm.unb.br/handle/10483/3765

Africa - Brazil Agricultural Innovation Marketplace: An analysis of the communication elements for organizational and international cooperation (In Portuguese)

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ANNEXES

I. Organizing the MKTPlace Forum

The Four *Fora*

Currently the MKTPlace has held four *fora*. All of them took place in Brasília in 2010, 2012, 2014, and 2015 and aimed to consolidate the MKTPlace as a mechanism of South-South collaboration based on continuous learning.

The first two *fora* had the participation of actors outside the MKTPlace, such as congresspersons and institutions not directly related to it, and reflected the beginning of the initiative.

The first *forum* edition (held in 2010, limited to participants from Africa and Brazil) was the outcome of the first MKTPlace competitive call for proposals. It was an event programmed as part of the strategy to enable African and Brazilian researchers to meet one another personally, to go into details about their ideas and themes of joint research, and to consolidate and build new partnerships. Previously, researchers had only interacted through the Internet, and very few of them knew each other. All researchers who had submitted a preliminary proposal, independently of having their proposal approved, were invited to the *forum*. Participants included 45 African researchers from 15 countries, and 44 Brazilian researchers. The main purpose of the *forum* was to continue the dialogue initiated by researchers, to give feedback on aspects of how to write winning proposals, to broaden participants' understanding of the MKTPlace, to consolidate partnerships, and to discuss the possibility of expanding the scope of the cooperation. At the event, participants received information about the factors that contributed to the approval of the first round of proposals and were placed in a favorable environment for discussing how to enhance the proposals that did not make it, with a view to submitting them again in further calls, as well as designing new research proposals.

The presence of LAC partners was one of two remarkable differences in the second edition of the *forum*, in 2012 in comparison to the first one. In 2012, 117 co-leaders from Africa, LAC, and Brazil, representing 62 projects and 27 countries, attended the *forum*. The second difference was the addition of tailor-made learning workshops to the *forum* program. Thus, the 2nd edition paved the way for consolidating the MKTPlace as a mechanism of South-South collaboration based on continuous learning and made it possible to put into practice all general *fora* objectives, as listed earlier. From this edition onwards, the MKTPlace *fora* became an opportunity for knowledge sharing between professionals and practitioners from Africa, LAC, and Brazil, as well as the setting to incite learning between implementers and applicants of MKTPlace proposals.

In comparison to the first two editions, the *fora* held in 2014 and 2015 were more focused on the MKTPlace's own results and in knowledge sharing between "project generations," conferring a leading role in the *fora* programs to the MKTPlace community.

In 2014, 30 co-leaders of starting projects (junior projects) selected in the 2014 call for proposals and another 20 co-leaders of projects already completed (senior projects) participated in the *forum*, representing 14 countries. In total, there were 74 participants, including invited guests. Two important objectives guided the building of the event agenda: to share knowledge and learnt lessons in overcoming the most frequent challenges of project implementation and to take advantage of the opportunities for scaling up achieved project results. In a series of interactive sessions, project implementation challenges were discussed, and junior project co-leaders were coached by senior project co-leaders on issues such as communication between partners and germplasm exchange. To close the *forum*, for the first time, a field trip was held. Participants visited Embrapa Savannah, an eco-regional research unit aimed at generating knowledge to ensure sustainable environmental quality of the Brazilian Savannah, known as *Cerrado*, and technologies appropriate to different production systems, validated and made available for dissemination to small, medium, and large farmers. The participants had the chance to have an overall view of Embrapa Cerrado's research program and visit and discuss some of the research projects.

In 2015, 106 participants from 19 countries were able to get together in a very fruitful environment. They represented projects from 2012 (senior projects) and 2014 (junior projects). This time, the field visit was held in a family-run farm and business, which was meant to inspire participants and to illustrate that it is perfectly feasible and possible to put in practice simple and straightforward technologies and processes, such as many of those generated in the projects supported by the MKTPlace.

Throughout the different sessions of the *fora*, themes that reflected the difficulties and successes of the concluded projects (senior projects) were widely discussed with participants, providing new co-leaders with the opportunity to learn from the successes and mistakes of the more experienced project co-leaders.

From 2012 on, the real-time evaluations carried out at the end of each *forum* turned out to be extremely relevant, not only for the *fora* themselves but also for the MKTPlace as a whole. Using an instantaneous voting system, the organizers could survey the audience's criticism of the MKTPlace as a mechanism of research collaboration, the proposal submission process, and the *fora*, from their technical and logistic angles. Opinions were taken based on the intensity of acceptance or rejection of given statements (from strong agreement to strong disagreement). Core assessment statements were kept the same since the very first *forum* edition, whereas specific statements were introduced or dropped out from year to year. It is worth mentioning that the real-time evaluation sessions were intentionally carried out in a light and informal atmosphere, with generous pinches of good humor. Although it might sound like a small detail, in fact, this *savoir faire* enhanced a genuine and voluntary participation, considerably contributing to the reliability of results. In addition, it made these sessions memorable moments in all *fora*.

Based on the evaluations, the coordination could introduce changes and fine tune aspects of the MKTPlace, including the *fora*. The duration of the *fora*, reduced from the first edition's five days to the current three days, as well as the continuation of coaching sessions in the program, are good examples of inputs received from the evaluation sessions. Interestingly enough, the preservation of core statements in all editions allowed the MKTPlace improvement to be measured over time. Equally important, it also allowed the consistency of the changes introduced after each *forum* edition to be checked and to compare different audiences across years, based on variations in their expectations and perception of the MKTPlace, and, of course, its *fora*. This gives an incomparable all-time panoramic picture of the MKTPlace community.

Organizing a *Forum*

Once a committed and enthusiastic team is assembled, it is necessary to start giving shape and dimension to the forum. In our case, the *fora* organization starts at least eight months in advance and, in general around 130 guests attend, corresponding to the number of invited co-leaders (two per project), and an additional 25 people, which includes speakers, facilitators, partner institution representatives, and supporting staff.

Having these definitions, the first decision is where the *forum* will take place. Several factors must be put together for consideration. The host city must be easily accessible by all participants, requiring direct international flights or easy connections and low airfares. The choice must also take into account the number of participants that must travel and be accommodated, the availability and average prices of accommodation, meals, services related to the *fora* (such as catering and audiovisual), and facilities related to public services.

The next step is selecting the venue. The less commuting, the better: conference rooms located at the same lodging and restaurant facilities simplifies the logistics incredibly, reduces costs, especially in shuttling, and optimizes the time allocated for both the *forum* program and the meals. Regarding foreign guests, both co-leaders and partners, the organizing committee has to timely send a specific invitation letter for visa purposes, when necessary.

Turning to contracts with service suppliers, they must cover lodging, conference rooms, audiovisual equipment, furniture, meals, and catering. Additional support personnel (IT staff, communication, emergency medical support, and others) must also be considered. Prior to the event, it is crucial to have staff to look after air ticket issuing, communication and contract management and, during the event, to take care of staff management, daily-related issues and the event secretariat.

In the case of the MKTPlace, as the *fora* are the floor for full interaction and knowledge and expectation-sharing among junior and senior project

co-leaders and MKTPlace partners, the program must consider the following activities, not necessarily sorted as mentioned here:

a) Opening remarks by partners and institutional guests. A second session for partners' words might be considered;

b) A meet-your-partner co-leader dynamic, as most partners have not met in person so far;

c) A session(s) for co-leaders to present and discuss their project results and achievements;

d) A session(s) dedicated to discussing project implementation topics, including financial matters, benefiting from the presence of the coordinators, partners, and co-leaders of senior projects who have built knowledge and know-how on dealing with these issues. It is interesting to stimulate the voluntary networking among participants from different projects;

e) A field trip connected to the program, meant as a real-case example of the main issues the MKTPlace deals with. It can be a visit to a research institute, fairs, markets or to a farm, for example;

f) A *forum* evaluation session;

g) Workshops for junior and senior projects co-leaders;

h) A brief and dynamic certificate delivery session, which should be scheduled to close the working program, to avoid dispersion; and

i) A closing dinner.

The agenda must be organized in order to cover all activities but should avoid being tiring. A three-day program might suffice. It is crucial that all participants attend the whole event, especially the members of the Steering Committee. Placing the field trip on the second day – in the middle of the program – strongly favored the integration among participants and significantly reduced dropouts. A shorter program on the last day might also be considered to allow participants some spare time.

II. Implementing the MKTPlace financial architecture

The operationalization of the MKTPlace started with liaison between Embrapa and the donor partner. At that moment, the "rules of the game" were defined, and these were formalized when the Grant Agreement was signed between the donor partner and the financial institution (Funarbe).

The next step was for the donor partner to transfer the resources previously negotiated and established (in the Agreement), to enter a specific bank account opened by Funarbe for each donation. The foundation is responsible for managing these resources, monitoring bank-account movements, as established by the funding agency and in accordance with the specific funding instruments (referring to Funarbe and the partner institution), as well as with the basic guidelines of the MKTPlace. While being used, these resources are invested on the stock market by Funarbe on a monthly basis, generating additional income that is used for the benefit of the MKTPlace activities.

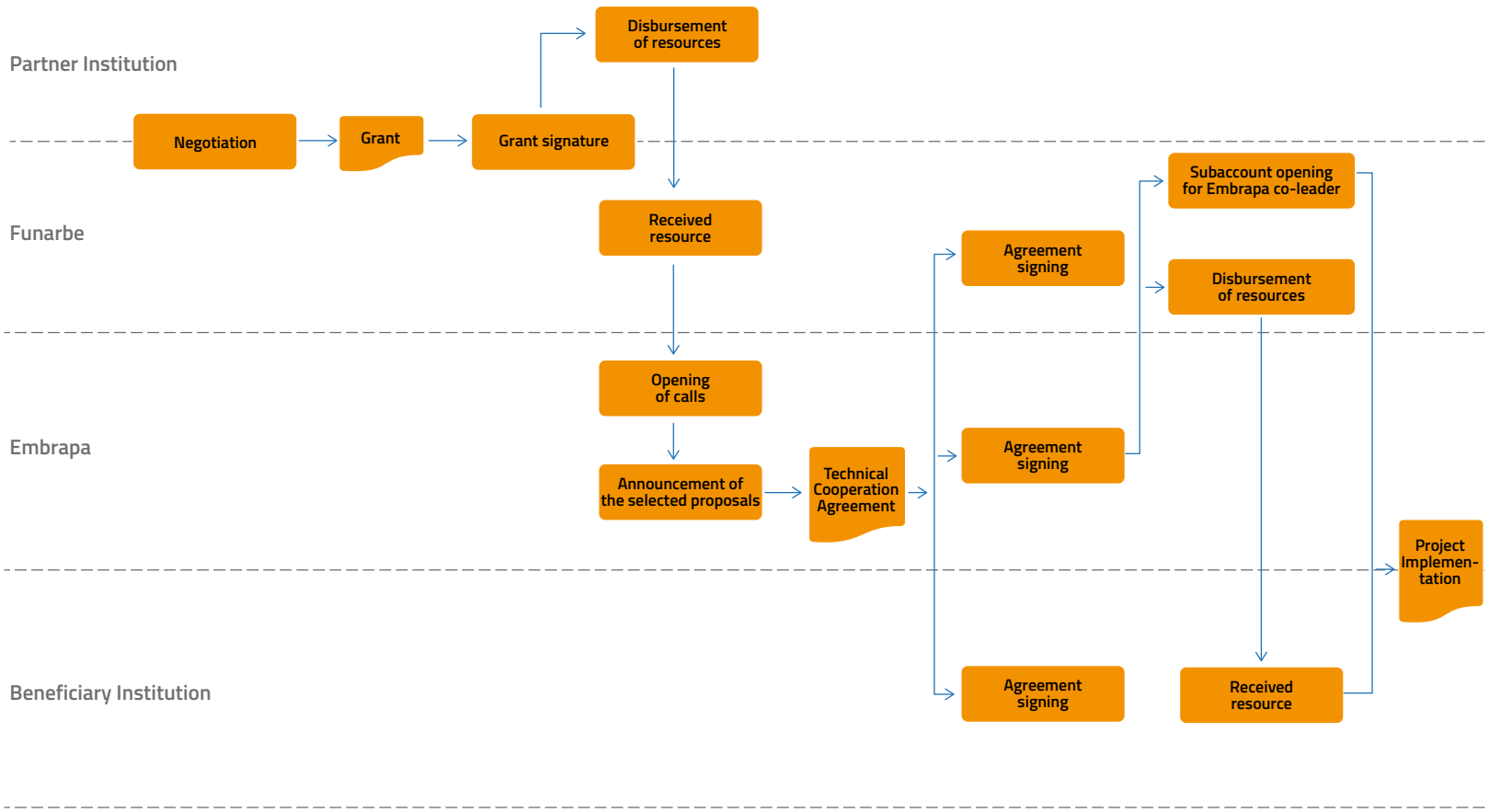
From the moment the resource becomes available, the PCU starts the process of making a call for research projects for selection and approval. Next, research project approval is confirmed in a Technical Cooperation Agreement between Embrapa, the beneficiary institution and the fiscal agent (Funarbe) for each research project to be implemented. In this instrument are established all the details agreed on by the parties, including the value of the budget approved for the project.

The execution of the research project, the object of the Technical Cooperation Agreement, occurs in the following way: (i) a sum of money from the budget for execution of the actions of the project in Africa or in Latin America/the Caribbean is transferred by Funarbe to the beneficiary institution; (ii) the rest of the grant remains at Funarbe, to be used by the Brazilian researcher (Embrapa), and it is up to this party to execute the requests for purchase, reimbursement, importation, acquisition of air tickets, payment of per diems, outsourced contracts, and consultancies, in accordance with the foundation's norms; (iii) Funarbe creates a sub-account in its system (the Integrated System for Agreements, SIC) for credit and application of resources destined for the execution of actions in Brazil within the approved project; (iv) for the use of this resource, Funarbe grants the Brazilian researcher a profile and code that allows her/him to access the SIC; (v) when the project execution is finished, the co-leaders prepare the technical and financial report, together, and send it to Embrapa and Funarbe.

The resources donated to the MKTPlace by the partners are not only for the execution of research projects (ca. 55%) but also for contracting consultants, organizing events (*fora*, workshops, meetings), domestic and international trips, creation and maintenance of the website, and other actions that are necessary for the smooth running of the Platform. It is up to the PCU to coordinate the existing demands and to orient Funarbe when necessary.

The table and flowchart summarize the stages that should be followed for the disbursement of resources destined for the execution of research projects:

Foreign Researcher	Embrapa Researcher
Open current account - beneficiary institution.	-
Draw up and sign Technical Cooperation Agreement - Embrapa, Funarbe and beneficiary institution.	
PCU registers the purchase request in Funarbe's Integrated System for Agreements (SIC).	PCU requests that a sub-account be opened in the name of the researcher within Funarbe's Integrated System for Agreements (SIC).
Funarbe asks the Bank of Brazil to transfer resources to the beneficiary institution.	-
The beneficiary institution receives the financial resources for the implementation of the project.	The researcher receives a code from Funarbe, so that he or she can access the SIC to use the financial resources available for the implementation of the project.


Partner Institution
Disbursement of resources
Negotiation
Grant
Grant signature
Funarbe
Received resource
Subaccount opening for Embrapa co-leader
Agreement signing
Disbursement of resources
Embrapa
Opening of calls
Agreement signing
Announcement of the selected proposals
Technical Cooperation Agreement
Project Implemen-tation
Beneficiary Institution
Agreement signing
Received resource

ACRONYMS AND ABBREVIATIONS

ABC	Brazilian Cooperation Agency
AR4D	Agricultural Research for Development
B&MGF	Bill & Melinda Gates Foundation
C4	The Cotton Four Project
CAADP	Comprehensive Africa Agriculture Development Program
CCAFS	Research Program on Climate Change, Agriculture and Food Security
CFP	Call for Proposals
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Center for Tropical Agriculture
COP21	Twenty-First Conference of the Parties
DFID	UK Department for International Development
DGF	Development Grant Facility
DICTA	Directorate of Agricultural and Livestock Science and Technology
EC	Executive Committee
EMBRAPA	Brazilian Agricultural Research Corporation
EU	European Union
FAAP	Framework for African Agricultural Productivity
FAO	Food and Agriculture Organization of the United Nations
FARA	*Forum* for Agricultural Research in Africa
FFS	Farmer Field Schools
FLAR	Latin-American Fund for Rice Research
FORAGRO	*Forum* for the Americas on Agricultural Research and Technology Development
FUNARBE	Arthur Bernardes Foundation
G20	Group of Twenty
G7	Group of Seven
G77	Group of the Seventy Seven
GGs	Global Goals
GMO	Genetically Modified Organism
IBSA	India-Brazil-South Africa
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
IDEARE	Embrapa's Program Management System
IFAD	International Fund for Agricultural Development
IICA	Inter-American Institute for Cooperation on Agriculture
IITA	International Institute of Tropical Agriculture
JICA	Japan International Cooperation Agency

KS	Knowledge Sharing
LAC	Latin America and Caribbean
M&E	Monitoring and Evaluation
M-BoSs	Building on the Successes of the MKTPlace
MDGs	Millennium Development Goals
MKTPlace	Agricultural Innovation Marketplace
MMW	Monthly Minimum Wage
MRE	Brazilian Ministry of Foreign Affairs
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OISC	Oversight and Initiative Selection Committee
PABRA	Pan-Africa Bean Research Alliance
PCU	Project Coordination Unit
PROCINORTE	Cooperative Program in Agricultural Research and Technology
PROCISUR	Cooperative Program for the Technological Development of Agriculture and Agribusiness for the Southern Cone
PROCITROPICOS	Cooperative Program for Agricultural Research, Development and Innovation in the South American Tropics
PROMECAFE	Regional Cooperative Program for the Technological Development and Modernization of Coffee Cultivation
R&D	Research and Development
R4D	Research for Development
RRA	Rapid Rural Appraisal
SC	Steering Committee
SDGs	Sustainable Development Goals
SWOT	Analysis Strengths, Weaknesses, Opportunities and Threats
SSC	South-South Cooperation
SSF	Small Scale Farming
TCDC	Technical Cooperation among Developing Countries
ToR	Term of Reference
UCDAVIS	University of California, Davis
UN	United Nations
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WB	World Bank
WBG	World Bank Group
WFP	World Food Program
WHO	World Health Organization
WTO	World Trade Organization

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