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FOOD SECURITY IN PRACTICE

Building Public-Private Partnerships

for Agricultural Innovation

*Frank Hartwich, Jaime Tola, Alejandra Engler, Carolina González,
Graciela Ghezan, Jorge M. P. Vázquez-Alvarado, José Antonio Silva,
José de Jesús Espinoza, and María Verónica Gottret*



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Financial Contributors and Partners

IFPRI's research, capacity strengthening, and communications work is made possible by its financial contributors and partners. IFPRI gratefully acknowledges the generous unrestricted funding from Australia, Canada, China, Finland, France, Germany, India, Ireland, Italy, Japan, Netherlands, Norway, Philippines, Sweden, Switzerland, United Kingdom, United States, and World Bank.

Cover design: Joan K. Stephens

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How to cite this book: Hartwich, Frank, Jaime Tola, Alejandra Engler, Carolina González, Graciela Ghezan, Jorge M. P. Vázquez-Alvarado, José Antonio Silva, José de Jesús Espinoza, and María Verónica Gottret. 2007. Building Public–Private Partnerships for Agricultural Innovation. Food Security in Practice technical guide series. Washington, D.C.: International Food Policy Research Institute.

DOI: 10.2499/9780896297715fsp4

Library of Congress Cataloging-in-Publication Data

Building public-private partnerships for agricultural innovation / authors Frank Hartwich ... [et al.].

p. cm. — (Food security in practice ; no. 4)

Includes bibliographical references.

ISBN 978-0-89629-771-5 (alk. paper)

1. Agricultural innovations—Latin America. 2. Public-private sector cooperation—Latin America. 3. Agriculture—Research—Latin America. 4. Intellectual property—Latin America. I. Hartwich, Frank. II. Series: Food security in practice technical guide series ; no. 4.

S494.5.I5B85 2008

338.1—dc22

2008013112

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Acknowledgments

The authors would like to thank the German Federal Ministry for Economic Cooperation and Development (BMZ) and Canada's International Development Research Centre (IDRC) for supporting the studies that generated the research on which this document is based. The authors also thank all the public and private organizations in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Mexico, Uruguay, and Venezuela that facilitated and supported these studies in their countries.

Glossary

Public–private partnerships: Collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks in order to achieve more efficiency in the production and delivery of products and services.

Partnerships in agricultural research and innovation:

Collaborative mechanisms in which actors in research fields and in the private sector share resources and risks and generate innovation for the development of the agricultural sector, including the livestock, forestry, and fisheries sectors. Possible partners include research institutes, universities, and extension agencies in the public sector, and producers’ associations, businesses, and individual producers in the private sector. Often, in less-developed countries, these partnerships are supported by governments and international cooperation agencies.

Agricultural value chains: Mechanisms that allow producers, processors, buyers, sellers, and consumers—separated by time and space—to gradually add value to agricultural products as they pass from one link in the chain to the next. There may be different levels of development and integration among the actors in the value chains. Value chains present opportunities in which actors may identify a common interest and build a public–private research partnership.

Appropriable technologies: Technologies resulting from a research process are “appropriable” to the extent that the organizations involved in their creation may obtain patents and other intellectual property rights and deny their use to others. This gives them the exclusive right to sell the innovation to those able to pay for its use.

Steering committee: Is made up of a range of representatives of organizations that are potentially interested in forming a partnership. This group plays a fundamental role in the identification and negotiation of the common interest. Once the partnership has been created, the steering committee becomes a directing or managing committee, with the mandate to administer and manage the partnership.

Visionary leaders: They are members of the organizations participating in the partnership who not only pursue organizational interests, but also have a vision for the development of the sector and for the strategic activities that are necessary to achieve it. Leaders also have sufficient motivation and ability to enable members of the partnership to act in a synchronized manner.

Partnership promoters: Individuals or organizations that do not form part of the partnership but support it through motivation, political and financial assistance, training, and awareness building. They include government bodies such as funding agencies, sectoral development boards, or export promotion bodies, as well as donor institutions and international development cooperation agencies.

Executive Summary

Public–private partnerships are a new way of carrying out research and development (R&D) in Latin America’s agricultural sector. These partnerships spur innovation for agricultural development and have various advantages over other institutional arrangements fostering R&D. Specifically, they:

1. reduce the costs and risks entailed in research;
2. improve the quality and relevancy of research results due to synergies among the partners, and ensure greater adoption by user groups;
3. lead to the accumulation of complementary abilities, skills, and resources;
4. lead to higher competitiveness and better market positioning as a result of improved competencies; and
5. promote development and poverty reduction by providing small-scale farmers with access to knowledge and technologies.

This report summarizes the experiences of a research project that analyzed 125 public–private research partnerships (PPPs) in 12 Latin American countries. The analysis indicates that several types of partnerships have emerged in response to the various needs of the different partners. Nevertheless, public–private partnerships are not always the most appropriate mechanism by which to carry out R&D and foster innovation in agriculture. Sometimes, it is more efficient to organize research via participatory projects or through research contracts. Before deciding to participate in a partnership, the partners must consider the following factors:

- whether there is a common interest,
- whether the cost–benefit relationship is positive for each partner,
- whether all partners derive benefits from their contributions,
- whether there is sufficient equilibrium between the partners’ benefits, and
- whether or not the partnership produces results that are nonconflictive.

The creation of public–private partnerships occurs in several phases: (1) identifying a common interest; (2) negotiating the partnership contract, including financing and organizational design; (3) operating the partnership itself; (4) evaluating it; and (5) deciding to terminate or continue the partnership.

Identifying a common interest

Identifying a common interest can require (a) forming a steering committee to oversee the planning of the partnership; (b) identifying and convening potential partners and key actors in the value chain; (c) mapping the value chain; (d) identifying and analyzing technological opportunities; (e) undertaking a prospective analysis of current and potential markets; and (f) determining the common interest shared by the potential partners. Generally, this interest can be determined by examining everyone’s expectations surrounding the agricultural value chain.

The partners should consider how to secure adequate funding for the partnership. Sources include private, public, commodity, and development funds from government and donor agencies as

well as from foundations. These sources, in turn, may influence the orientation of the partnership. Different funding mechanisms may be used, including direct allocation and competitive funds. In order to ensure transparency in the management of all partners' financial and in-kind contributions, the type and sum of the funds must be adequately accounted for and all partners must be aware of the actual contributions of all their counterparts. A well-functioning partnership needs to ensure that partners and donors comply with their commitments—both in magnitude and time—and that financial control will be exercised by a specialized entity or by all partners jointly in a committee.

Negotiating the contract

Successful partnerships are usually formalized legally, in one of three basic ways: contractual agreements, temporary associations, or the creation of new legal entities. Generally, national legislations and organizational norms do not stand in the way of partnership building; on the contrary, they support the process. Clearly stipulating the rules in the contract helps to avoid any undesired risks of collaboration, such as partners being afraid to participate because of traditions within their organizations or ignorance vis-à-vis the legal implications. Intellectual property rights are legal instruments for appropriating the results of the R&D conducted under a partnership agreement. Partnership need to take into account any national and international legislation with regard to intellectual property rights such as patenting and the rights of plant breeders. However, with exception of the plant-breeding

sector, most private-sector agents are less interested in gains from intellectual property—which in most Latin American countries is difficult to protect due to legal enforcement problems—and would rather exploit the benefits from research and development that help primary producers to improve the quality and quantity of their production.

The partners should establish an organizational design for the partnership that enables efficient decisionmaking, work organization, information exchange, monitoring, and evaluation. This structure should be established in accordance with the partnership's needs, which depend on its scope, the types of actors involved, and its size. Possible organizational designs include an operating team, a representation committee, a managing committee, and a manager model.

Operating and evaluating the partnership

Measures that contribute to the proper functioning of a partnership include those that promote confidence and understanding among partners of different cultural backgrounds, and that promote the development of a strategic vision that brings together the partners' interests. Partnerships must also be continuously evaluated. Evaluation can focus on (a) the intermediate and final results and their usefulness for each actor involved; (b) the functioning of the partnership; and (c) the partnership's evolution, that is, how it adapts to changing circumstances. These three types of evaluations can be combined and led by internal as well as external evaluators. A particularly efficient way of improving partnership operations is to

have all partners participate in continuous self-evaluation activities. Regardless of the type of evaluation used, it should be an integral part of the partnership's operation.

Deciding to continue or terminate

When the partnership's predetermined timeframe has elapsed, the partnership may decide to continue or terminate. Continuation is useful if the partners' original interests have been broadened and consolidated. The partnership agreement can also remain in effect if the problem it sought to address has not yet been resolved, or if new approaches had to be found due to socioeconomic or technical changes. The partnership may be terminated if the partners believe that it has satisfactorily achieved the desired results or if they determine that the initial goals cannot be attained without incurring additional, prohibitive costs.

How Should This Guide Be Used?

The project that serves as the basis for this guide sought to promote the use of the public–private partnership model to generate innovation in Latin America’s agricultural and agro-industrial sectors. Between 2001 and 2005, the project studied a series of local and national public–private partnerships in agricultural research and innovation in 12 Latin American countries and contributed to the building of partnerships in specific cases and trained key actors in the creation of partnerships in the region (see Appendix I).

The purpose of this technical guide is to share the information generated by the project with R&D administrators in institutions that wish to participate, or are participating, in public–private partnerships for innovation in the agricultural sector. This includes research institutes, universities, producers associations, peasant organizations, and private companies in the sector.

The guide includes information on the activities that lead to the building of partnerships, the issues that should be negotiated among the partners, the management of the partnership, and obstacles that may have to be overcome in the operation of the partnership. These activities include identifying the common interest, securing adequate funding, formalizing the partnership through a contract, and implementing an adequate organizational design and leadership structure. Various recommendations are offered for each step in the partnership-forming process.

It is important to keep in mind that partnerships are flexible collaborative mechanisms that depend on the context

in which they evolve. Therefore, partners can choose to follow or avoid the recommendations put forth here as they see fit. In the end, the direction that the partnership takes will depend largely on the creativity and commitment of those participating in it.

There are two ways to use the guide:

1. As a self-teaching tool for the purpose of creating and consolidating a specific partnership. In this case, users must adapt the information to the particularities of the specific partnership.
2. As basic information for possible use in formal training. In this case, users must adapt the information to the particularities of the course offered.

The guide consists of seven chapters, each of which is organized around a specific purpose and objectives for learning. The first chapter discusses public–private partnerships in general and agricultural innovation in particular. Chapters 2 through 5 analyze various aspects of how partnerships function, from financial and legal issues to those related to organizational design. Chapter 6 examines the measures that lead to the improved functioning and operation of a partnership. It also explores approaches to the evaluation of partnerships and possible scenarios or situations that may arise that could lead to the termination or continuation of the partnership. Chapter 7 examines all of the considerations involved in partnership formation using a specific case study: a partnership to improve peanut production among smallholder in Bolivia’s Mairana Valley.

Introduction

In recent years, public–private partnerships have been heavily promoted in the education, health, infrastructure, and community-development sectors in order to improve efficiency in the generation and performance of public services. This has also been true in the field of agricultural development,¹ where public and private actors hope to use partnerships to generate and spread innovations that would otherwise be complicated to develop separately.

Public–private partnerships are agreements by which public and private entities share resources, risks, and benefits in order to generate and provide products and services more efficiently. Partnerships are not simply tools for finding complementary funds; they require a commitment from all the partners. In agricultural development, participants in research partnerships have traditionally included private entities (such as producers’ associations, small-farmer organizations, businesses, and individual producers) and organizations involved in the generation and dissemination of knowledge and technology (such as universities, research institutes, and extension agencies).

Though different public–private research partnerships in agriculture vary significantly due to the different expectations of the actors, there are five principal benefits common to all partnerships:

1. They reduce the costs and risks entailed in research;
2. They improve the quality and relevancy of research results due to synergies among the partners, and ensure greater adoption by user groups;
3. They lead to the accumulation of complementary abilities, skills, and resources;
4. They lead to higher competitiveness and better market positioning as a result of improved competencies; and
5. They promote development and poverty reduction by providing small-scale farmers with access to knowledge and technologies.

Although much has been written in support of public–private partnerships as a mechanism by which to foster agricultural research and innovation, they are still underutilized and little understood. Therefore, this guide provides detailed knowledge on the operation of public–private partnerships and provides recommendations on how they can be improved and consolidated.

The guide is based on a project entitled “Public-Private Partnerships for Research” (the PPP project), which was undertaken between 2001 and 2005 by a team of specialists from agricultural research institutions in Latin America

¹ The agricultural sector here includes the livestock, forestry, and fisheries subsectors, as well as the agro-industries.

and from the International Service for National Agricultural Research (ISNAR), now a division of the International Food Policy Research Institute (IFPRI). The researchers studied 125 cases of public–private partnerships in the agrifood sectors of 12 Latin American countries (for more details, see Appendix 1). Although the findings relate to this regional context, they may have sufficient relevance to the dynamics of building public–private partnerships in other parts of the developing world that are characterized by weak public-sector institutions, reduced private-sector involvement in R&D, and overarching challenges for innovation in the agricultural sector.



Chapter 1: Understanding the Process of Partnership Building

PURPOSE

The purpose of this chapter is to present the principal points of the public–private partnerships approach to generating innovation in the agricultural sector.

LEARNING OBJECTIVES

- To identify different actors' motivations for joining public–private partnerships.
- To understand that partnerships only develop when a common interest exists between the public and private sectors.
- To see that beneficial partnerships require contributions and commitment from all members.
- To understand that the building of a partnership is a multiphase process.
- To recognize that partnerships are very flexible mechanisms and that there are different ways and forms of establishing them.

Why do people establish public–private partnerships to conduct agricultural research and foster innovation? Businesspeople, development specialists, representatives of producer organizations and

researchers in Latin America provided the following answers:

- *“Innovation and knowledge are critical factors for achieving sustainable competitiveness. We become involved in partnerships to gain access to knowledge and technologies and to develop innovations that otherwise would be more costly for us to obtain or develop.”*
- *“The growing complexity of technologies, the knowledge necessary to develop chains and segments, and the scarcity of resources mean research cannot be carried out in isolation, whether by science and technology organizations or enterprises from the productive sector.”*
- *“Teamwork increases the quality and relevance of the results and the synergic effects that occur when we collaborate with actors who have knowledge and resources that we do not.”*
- *“Collaboration makes it possible to obtain complementary funds that permit us to maintain and develop R&D activities that we usually must face with financial limitations.”*

Partnerships in research among public and private entities have existed for a long time. Germany has promoted

Example:

Suppose that in country X there exists a type of local “criollo” potato variety that is very nutritious, but has very low yields. Due to its low profitability, increasing production costs, a lack of financing opportunities to improve cultivation techniques, and market risks, many farmers, processors, and vendors were considering abandoning this local variety and replacing it with imported potatoes. Therefore, a group of potato traders and progressive farmers decided to collaborate in order to develop an improved “criollo” potato variety, which in their view will have considerable potential on the local market. A partnership was created between the National Association of Potato Buyers, the Union of Potato Producing Cooperatives, and the Public Institute for Agricultural Research with the goal of developing “criollo” potato production by (1) genetically improving the criollo variety in order to obtain better yields and product quality, (2) conducting research to develop cultivation practices that will increase yields, and (3) providing technical assistance to farmers and helping seed producers disseminate this new variety. The three partners contributed human and financial resources to carry out these activities. The Research Institute assumed responsibility for the first two activities, while the technical department of the Union of Cooperatives took care of the third. After five years of operation—during which the project also received support from different donor institutions—the partnership developed and disseminated improved varieties and agronomic knowledge among many of the country’s potato farmers. This resulted in increased productivity, production, and sales of the “criollo” potato on the national level. Consumers were satisfied, since they have a more nutritious product at competitive prices, and small producers were able to increase their income considerably. If the partnership had not been formed, each of the partners would have been unable to generate enough knowledge and resources to develop the innovation. Similarly, the partnership allowed the partners to learn and exchange information in the areas of production, research, and commercialization. Each of the partners gained from the joint learning process.

partnerships between public research institutes and industry since the nineteenth century, for example. In early twentieth-century England, partnerships were set up between university science, engineering, and industrial departments and academic specialists who worked as consultants for industry. And since the 1990s, the governments of many developed countries have reinvented the partnership concept under the label of public–private partnerships (PPPs) in an effort to improve the quality of public services in health, education, infrastructure, and other areas. Since then, PPPs have become policy tools for service provision, outsourcing, and privatization in many countries, especially in the Anglophone world.

In many European countries, and especially among members of the Organisation for Economic Co-operation and Development (OECD), public–private partnerships have become an important element of research, technology, and innovation policies. They do not focus so much on outsourcing public services to more efficient private service providers, but rather on promoting stronger collaboration between different public and private actors in order to contribute to research and innovation.

In the past decade, public–private partnerships have also become a tool for fostering development in less-developed countries. Governments, development cooperation agencies, research organizations, and universities in those countries have introduced PPPs to improve services education, health, and community development, and recently in innovation-led development in agriculture.

This section discusses the rationale behind PPPs and focuses on two related subjects: (1) the advantages of partnerships and the reasons actors decide to participate in them, and (2) the building of partnerships as a process that takes place in several phases, from the identification of a common problem/interest to the achievement of the final results.

1.1 THE DECISION TO JOIN A PARTNERSHIP

Public and private actors in the agricultural sector have different interests. The private sector is generally motivated by goals such as the maximization of earnings and economic profitability; increased productivity, competitiveness, or market position; cost reduction; increased product quality and diversity; leadership on markets; or consumer confidence. Small-scale farmers, in particular, tend to focus on reducing vulnerability and maximizing yields given the scarce resources available to them. The public sector, for its part, directs its efforts toward goals such as development, economic growth, social equity, and environmental sustainability, thus trying to foster social benefits and meet the needs of society.

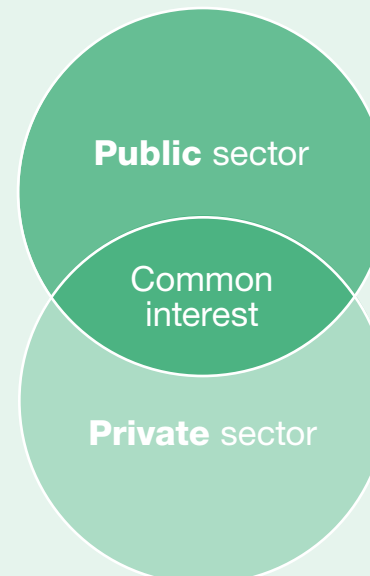
Cases may arise in which the divergent interests of both sectors are met. A technology may improve yields for small-scale farmers, benefit the environment, improve product quality, and generate additional profits for the processing industry. Scaling up individual (private) benefits for farmers and other marginalized groups may also lead to broader social benefits for the entire rural sector.

Partnerships between the public and private sectors are formed when actors in each sector believe they will benefit in a specific way. Five considerations that factor into this decision are examined below.

- Partnerships between the public and private sectors may develop when actors in each sector recognize they share a common interest (Figure 1), even though they may have different goals or objectives, and even if the common interest will not exist permanently and to an unlimited

Consideration 1:
Potential partners must have a common interest.

Figure 1: Area of common interest



degree. Sometimes the common interest is not broad enough to establish a partnership, in which case other mechanisms, such as contracts or conventional development projects, may be better options.

- The costs of implementing a partnership arise from the use of human, physical, and financial resources.

Consideration 2:
The benefits of the partnership should outweigh the costs.

There are two types of costs:

(1) those related to the partnership's research and development (R&D) activities and (2) those having to do with the partnership itself, such as costs related to its creation, negotiation, operation, and monitoring.

The second set of costs can be estimated by calculating the time and effort needed for negotiation, communication, and evaluation, for example. The benefits of a partnership result from the public and private goods and services that the joint research generates.

- In partnerships, members try to obtain net benefits greater than those that would be generated if they carried out the activities individually. This is achieved when the partners' contributions complement each other and form a critical mass that gives the project greater possibilities for success. For example, combining the funds of private companies with the technical capacities of a public research center allows a partnership to develop programs that, individually,

would be too costly for any of the partners to initiate; therefore, the complementarity of resources and knowledge generates synergistic effects. Indeed, many innovations are generated not only from the accumulation of knowledge and resources, but also from the interaction between public and private actors and from processes of joint learning and “co-innovation.”

Consideration 3:
The benefits of partnering—which result from each partner's contribution and from the synergy generated by the collaboration as a whole—should be greater than the benefits that would be obtained if the activities were carried out individually.

- A partnership will not function adequately if one of the actors perceives that the partnership is of greater benefit to the other partner. The ideal situation is when the cost–benefit relationship is proportionally positive; that is, when the benefits are positive for each partner and proportional to the contributions of each partner. At best, each partner has its investments multiplied at the same interest rate. Nevertheless, there are no clear rules for what may be considered proportional. After all, what is proportional is what allows the partners to feel satisfied.

Consideration 4:
The benefits that partners receive from the partnership should be balanced and proportional.

- Each partner should analyze whether the results of a partnership might damage the interests and goals of other groups in its domain. Conflicts sometimes arise between chemical and biotechnological innovations and consumer groups and environmental organizations, for example, so a dairy cooperative would not want to harm its image as a natural milk producer (and undermine consumer confidence in its products) by establishing a partnership with a company producing veterinary chemicals.

Consideration 5:

The results of a partnership should not openly conflict with the interests of other groups that are not involved in the partnership but that can impact one or more of the partners.

Ideally, potential partners should take these five considerations into account before entering into the partnership. However, it is often difficult for partners to obtain the required information and estimate the costs, benefits, and synergies that may result from a partnership. In such cases, actors will enter into partnerships in order to first explore opportunities.

1.2 THE CYCLE OF PARTNERSHIP FORMATION

Various authors studying partnerships in the business² or development³ arenas have made clear that partnership building occurs in several phases. Partnerships begin when a common interest arises and end when the proposed results are achieved or when the partners decide to terminate the partnership. Nevertheless, the process is iterative: some phases overlap, new problems and ways of operating the partnership arise, and processes that were already completed must be begun again. The following paragraphs describe the different phases of this cycle (see also Figure 2).

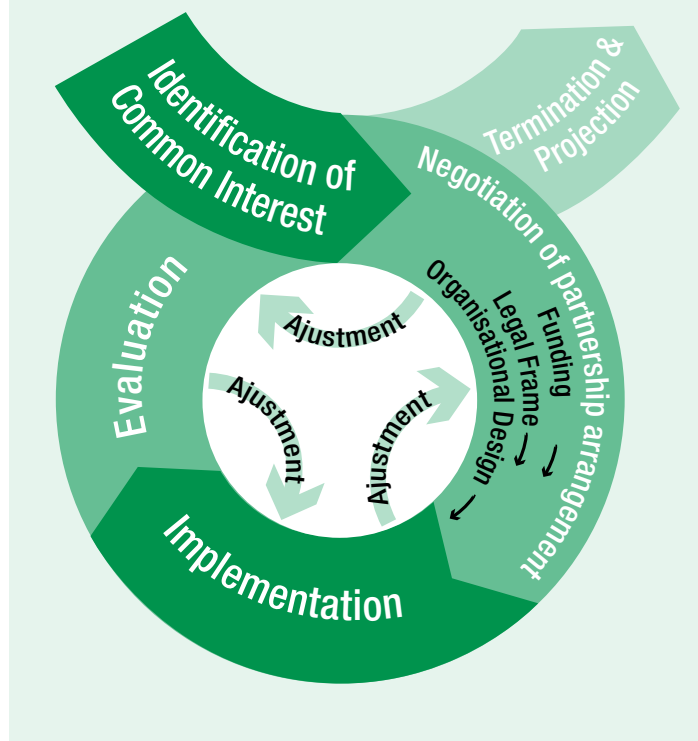
Phase 1: Identifying the Common Interest

The point of departure is usually a technical problem or a technological or market opportunity that can be resolved or addressed by research. The problem or opportunity may have already been identified by the public and private actors based on previous relationships or through a formal process of identifying a common interest (see Chapter 2). The common interest changes each time a new member enters the partnership or an old one departs. Therefore, it is often useful to develop a strategic vision that will allow the partnership to orient itself when it must adapt to changes in the socioeconomic context.

² See, for example, Y. Doz and G. Hamel. 1998. *Partnership Advantage: The Art of Creating Value through Partnering*. Boston: Harvard Business School Press; or S. P. Osborne, 2000. *Public-Private Partnerships: Theory and Practice in International Perspective*. London: Routledge.

³ See, for example, M. Warner. 2003. *Partnerships for Sustainable Development: Do We Need Partnership Brokers?* London: ODI; and A. Fiszbein and P. Lowden. 1999. *Working Together for a Change: Government, Business, and Civic Partnerships for Poverty Reduction in Latin America and the Caribbean*, EDI Learning Resources Series. Washington, D.C.: World Bank.

Figure 2: The cycle of partnership building



Phase 2: Negotiating the Partnership Contract

In this phase, the potential partners begin to develop the partnership's activities and discuss the expected costs versus the possible benefits. The goals of the partnership are reviewed, as are the interests and capacities of the potential partners. The main subjects of negotiation at this phase are:

- **Financing:** includes the search for possible funding sources, as well as for consensus about the cost of the project and the contributions of each of the partners involved (see Chapter 3).
- **Distribution of benefits and intellectual property:** includes a negotiation of the nature of the activities to be undertaken and a discussion of how the partners will benefit from the partnership (see Chapter 4). In the event that the partnership generates appropriable goods, an agreement needs to be reached as to who will own the intellectual property and how the profits—including rights and royalties—will be distributed.
- **Structure or organizational design of the partnership:** includes implementing an organizational structure by which the partners will decide who makes decisions and how, what the administrative structure will look like, and how communication among the partners will proceed (see Chapter 5).
- **Specific partnership activities:** includes reaching an agreement on the activities that will be needed to develop the innovations that the partnership proposes. The activities must accommodate the needs of the different actors and the various roles and functions assigned to participants.

This phase culminates in a formal or informal recognition of the agreement. If it is formal, a covenant or contract is signed that includes the different items that were negotiated. If the agreement is verbal, difficulties may arise later in the implementation of activities (such as incompliance by partners, the need to include other actors or funding sources, and others). Different partnerships require different levels of formality. For example, a partnership involving significant resources must be more formal than a smaller-scale partnership. However, it may be useful for all partnerships to adopt a certain degree of formality that allows partners to understand their basic commitments. An analysis of 125 partnership cases in Latin America indicates that many partnerships fail to reach their full potential due to insufficient formalization.

Phase 3: Operation

In this phase, the proposed activities of the partnership are put into practice (see Chapter 6). Some strategies that can improve the operation of partnerships include:

- **Confidence building:** The partners begin to address the problem together, share their knowledge, and learn about each other's motivations and capacities, all of which helps to develop confidence among the partners.
- **Transparency:** The partners need to have free and regular access to information regarding the resources used (human, physical, and financial) and the progress and achievements of the partnership's activities.

- **Understanding different cultures:** Often, cultural barriers exist between partners coming from different sectors. Recognizing the principal motivations of the public and private partners is a necessary condition if both sectors are to develop greater mutual trust.
- **Strategic vision:** The partnership should provide a mechanism for the discussion of strategic issues regarding the research conducted under the partnership arrangement. In many cases, a mid- or long-range vision can be created once certain bonds of confidence have been established.

Phase 4: Monitoring and Evaluation

The evaluation of a partnership can have different purposes, such as justifying the use of funds, understanding whether the expected results have been or are being generated and how efficiently they are being realized, and identifying the strengths and weaknesses of the partnership in areas related to administration, management, leadership, and the synergetic effect produced. The way in which the evaluation is conducted varies according to its purpose (see Chapter 6). Some evaluations, for example, focus primarily on the final research results obtained through the partnership. Other types of evaluation verify the use of resources and monitor the progress in achieving results. There are also participatory evaluation mechanisms in which the partners themselves review the results achieved, exchange information, and identify opportunities of improvement.

Phase 5: Termination or Continuation

After evaluating the partnership and examining whether the expected results have been achieved, the partners must choose whether to continue or terminate the partnership. The partners may decide to continue if the original interest has broadened and been consolidated, or if the original goals have not yet been attained. At the same time, the partners may decide to conclude the partnership if they believe that the expected results have not been satisfactory, have not been obtained in an efficient way, and/or do not meet the partners' interests, or if they determine that the initial objectives cannot be achieved without incurring additional costs that the partners are not prepared to pay.

FURTHER READING

European Commission. 2003. *Guidelines for Successful Public-Private Partnerships*. Brussels: European Commission. Open source document, available on the Internet.

This guide provides justifications for public organizations to collaborate with the private sector; discusses critical considerations in the collaboration; and makes recommendations regarding potential areas partnerships can focus on, legal and regulatory structures, the financial and economic implications, and the design, planning, and implementation of partnerships.

L.-F. Vieira, and F. Hartwich. 2002. *Approaching public-private partnerships for agro-industrial research: A methodological framework*. Coronado, Costa Rica: Oficina del ISNAR en el IICA. Open source document, available on the Internet.

This document examines the relationship between agro-industrial development and the generation of social benefits, and illustrates how agro-industrial research can contribute to these ends. It presents public-private partnerships as a tool for agro-industrial development and identifies ways to establish them.

F. Hartwich, C. González, and L.-F. Vieira. 2005. *Public-Private partnerships for innovation-led growth in agrichains: A useful tool for development in Latin America?* ISNAR Division Discussion Paper 1. Washington, D.C.: International Food Policy Research Institute. Open source document, available on the Internet.

This paper presents the results of a study of 125 public-private partnerships for agricultural and livestock research in seven Latin American countries. The results of this study, on which this guide's analysis is partially based, indicate that although the public and private sectors frequently form partnerships without a clear idea of what benefits can be obtained, most actors express satisfaction with the results that are generated. Nevertheless, the very limited nature of the actors' commitment keeps partnerships from reaching their maximum potential.

Fertilidad del Suelo

- Mejoramiento
- Incorporación materia orgánica
- Uso de plantas leguminosas
- Frijoles de abono
- Asociación de cultivos
- Rotación de cultivos



Chapter 2: Identifying and Negotiating the Common Interest

PURPOSE

The purpose of this chapter is to discuss how common interests among public and private organizations are identified, how joint objectives are determined, and how the partnership negotiations can be initiated.

LEARNING OBJECTIVES

- To understand the principles and points of departure for identifying the common interest necessary to build a partnership.
- To understand the process of identifying a common interest among actors with different interests and different degrees of organization and development within agricultural value chains.

2.1 FACILITATING THE IDENTIFICATION OF A COMMON INTEREST

Based on the experiences of partnerships in Latin America, it is clear that many partnerships emerged spontaneously from the random interaction between dynamic leaders in the private sector and researcher from

Box 1: Creation of a Partnership for Forage Seed Development in Chile

A small seed company specializing in improved fodder seeds in southern Chile maintains a close relationship with a regional center of the National Institute for Agricultural Research (Instituto Nacional de Investigación Agropecuaria, INIA), since the former multiplies the seeds of the latter. The relationship emerged because the company's managing director and the leader of INIA's seed-improvement program were colleagues from the same university. They decided to form a partnership to develop a specific high-yielding fodder variety that would meet the emerging demands of fodder producers in the region. INIA assumed responsibility for varietal improvement and basic testing. The company, in turn, performed applied field testing and multiplication. In the end, the partnership succeeded in developing a new variety, and the profits are now being shared among the partners through royalties.

public institutions who are open to requests from the private sector (see Box 1). Often, these actors already know each other and have confidence in each other's capacities. Other partnerships have been created through the efforts of visionary leaders or from government initiatives to foster collaboration between public research and the private sector.

Since the 1990s, governments have frequently used competitive grants for agricultural research and innovation

Box 2: Partnership Formation Based on a Policy of Developing Chains

In light of Colombia's increasing commercial integration with regional and global markets, the government has sought to promote the competitiveness of agricultural value chains and solicit the commitment of various actors from the private and public sectors through the use of sectoral agreements. Many of these sectoral agreements rely upon financing mechanisms that are based on levies on production or exports and equivalent allocations from the government. The funds are then used for sectoral development activities, such as providing technical assistance and market information and conducting research. Decisions on how to use the funds are made jointly by the actors participating in the sectoral committee. One of the outcomes of the sectoral agreements thus far has been the establishment of sectoral research centers that are financed by the sector and receive complementary funds from the government. These research centers can be considered macro-level partnerships.

to foster partnerships. Such grants require that public-sector research projects must involve private-sector organizations. Some countries have actually set up programs to promote partnerships. For instance, some governments have created platforms to identify the roles and interests of different actors in the various value chains and to try to bring them together to organize activities that promote chain development (see Box 2). While the platforms allow the various actors to reach consensus and develop joint projects, the potential partners must be motivated and must invest time in identifying their common interests in order to advance the partnership-building process.

Partnerships that include small-scale producers are often dominated by public-sector agents or nongovernmental organizations (NGOs), which either become partners or act as facilitators of the partnership. Partnership facilitators often have an important role in strengthening the capabilities of small producers in order to motivate them to take a role in the partnership.

The point of departure of the partnership-building process depends on a range of situational factors, including (a) whether or not a partnership has already been formed; (b) the partnership's degree of maturity; (c) the magnitude of the problems that the partnership tries to address or the opportunities it tries to respond to; and (d) the partners' strategic vision. The following situations may occur:

1. The partners have previously identified their interests and can proceed directly to the design and negotiation phase.
2. The partners have already conducted joint activities but decide to broaden them. This requires the identification of new partnership objectives, the redefinition of common interests, and the elaboration of a new work program.
3. The partners have no previous record of collaboration and wish to solve a one-time problem, based on a well-defined common interest.
4. The actors wish to solve several problems with regard to business and sector development issues and thus need a more strategic analysis of the development options.

2.2 PROPOSING A PROCESS TO IDENTIFY THE COMMON INTEREST

In the cases examined by the PPP project, potential partners embarked upon a series of steps to identify the common interest, including (1) building awareness and establishing a steering committee that would help identify potential common interests, (2) identifying and bringing together key actors in an agrichain, (3) mapping the agrichain, (4) identifying critical technological problems, (5) analyzing market opportunities, and (6) defining common goals and designing the partnership.

Consideration 6:
A steering committee that consists of representatives from the public, private, and innovation sectors can facilitate the creation of a partnership.

2.2.1 Awareness Building and Establishing a Steering Committee

In the first part of the process, an agent takes the initiative to build awareness among potential partners of the benefits of collaboration and establishing a partnership. The most interested parties can be persuaded to form a steering committee to help promote the partnership-building process. The members usually get together based on a common goal—for example, developing a certain sector or product or penetrating a certain market. If they do not already have this understanding, then their first activity will be to identify the common interest. The steering committee can consist of a range of different types of potential partners, but it should

include at least one representative of each of the following interest groups:

- A *facilitating organization* that represent public-sector interests. The organization must have credibility among public- and private-sector agents, must be able to bring both sectors together, and must relate to both adequately. The facilitating organization can act as a linking agent and interpreter among the partners, and can promote consensus.
- A *private-sector entity* that is in need of innovation and is ready to contribute to the partnership. The entity should be willing to look beyond its individual interests and have a broad, development-oriented vision. It should also be credible and well known, and should be able to bring together and influence other leaders from the private sector.
- A *knowledge and technology provider*, which may be an academic or research institution that is public, private, or mixed, or for-profit or not-for-profit. The organization must be credible and well known in its field of work, must offer valuable services, and must possess sound knowledge of available technological options.

2.2.2 Identifying and Bringing Together Key Actors

At this point the steering committee identifies potential partners that can contribute to attaining the defined goals. There are three useful criteria in choosing possible partners: (1) they should have a real desire to participate in and commit themselves to the partnership, (2) they can contribute to the development of innovations, and (3) they have confidence in the other actors. It is important to consider not only how the partners act in isolation, but also how they might interact with the other actors. It is therefore useful to know the history of their previous relationships and collaborations with other organizations. Actors with a history of unresolved conflicts should not be included.

It is also important to keep in mind that not all possible partners have to be included. It is sufficient to focus on prominent ones who can play different but essential roles in the partnership. For example, a company that processes a large share of the overall national production of a certain product exercises market power and can use it to negotiate the possible terms and topics taken up by the partnership. Similarly, funding organizations in the public sector can dictate how funds that subsidize a partnership are used. However, the steering committee must know how to manage the most powerful partners so that the interests of the weaker partners are not neglected.

It is likely that the members of the steering committee will come from significantly different organizational backgrounds and will not have collaborated previously. Therefore, building confidence among the steering committee members right from the start is crucial, though it will also grow as members interact and learn about each other's abilities.

2.2.3 Mapping the Agrichain

In this step, the actors decide to carry out a more in-depth analysis of the agrichain in which they want to develop the partnership.

Chain mapping is a technique that helps identify the various actors in the value chain, their functions and degree of power, and the interdependencies among them (see Box 3). Once the actors and relationships are drawn, then product flows, prices, and margins can be added to the map. Because extremely accurate maps require a lot of time and effort, the actors may want to define a certain level of acceptable error margins in the mapping exercise in order to get the task done in time.

Figure 3 shows how the broccoli chain in Ecuador was mapped.

Consideration 7:
Agricultural value chains constitute an appropriate context to identify partners' common interest.

Box 3: Components of the agrichain map

The actors

- Who are they and what are their functions?
- Where are they located and how are they related?
- What are their characteristics and what technology(ies) do they use?

Flows of products and prices

- What are the volumes of production and processing?
- For what prices are the products sold at the different levels of the chain?

Market characteristics

- What are the product's characteristics?
- What is the volume of demand?
- How much of the product is on the market throughout the year?
- What are the tendencies of demand and of prices?

Technology

- What are the primary production systems, their relative importance, and the technology used?
- What are the characteristics of the companies involved in distribution, transport, conservation, and postharvest activities, as well as their relative importance and technology used?
- What role does technology play in the chain's competitiveness strategies?

Determining final price

- What are the costs of available production, postharvest handling, transformation, and commercialization? How do these costs vary with the different technological levels used in the productive processes?
- What are the buying and selling prices at each step in the chain?
- What is the chain's efficiency (yields, conversion factors, etc.)?

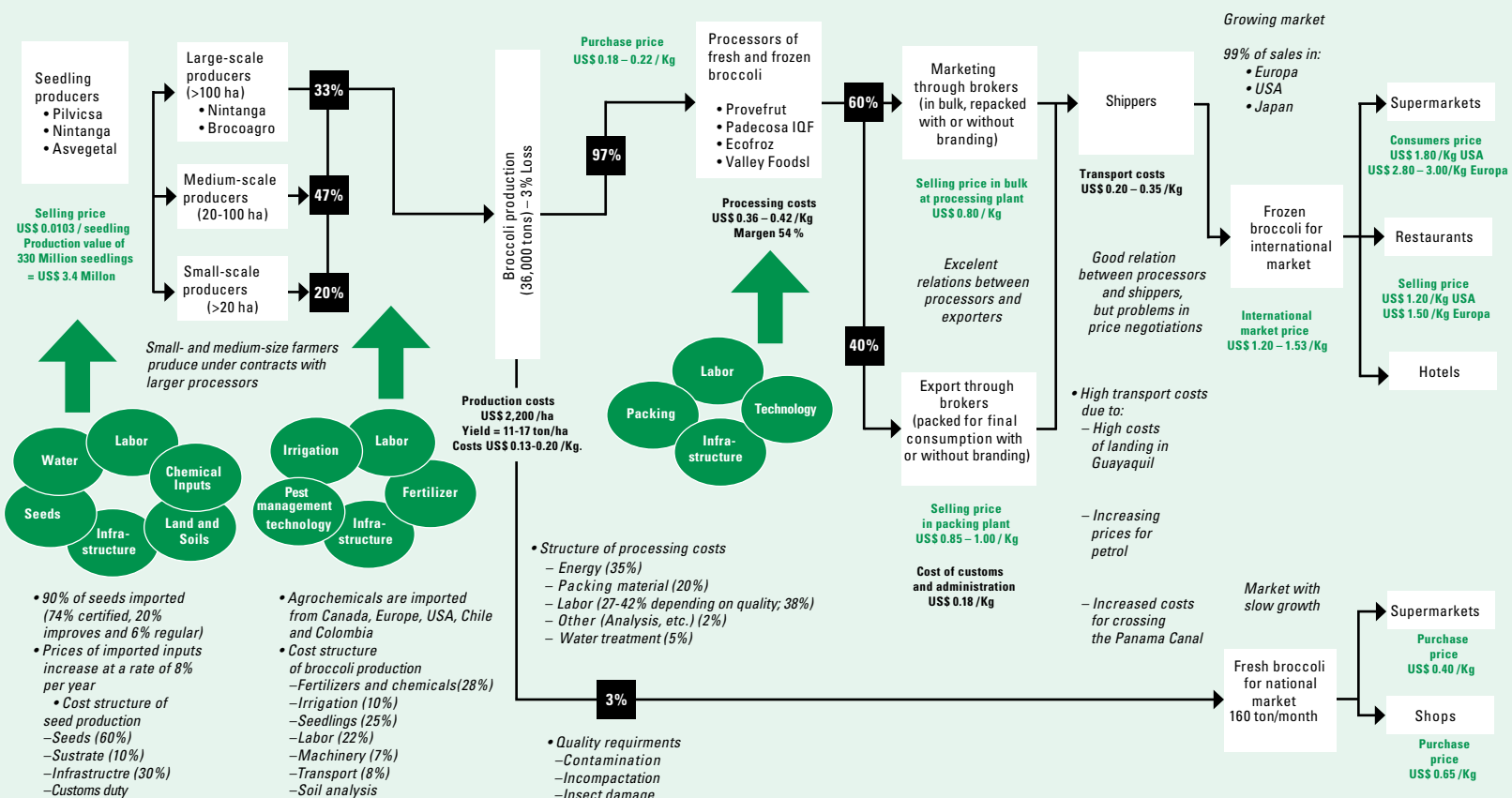
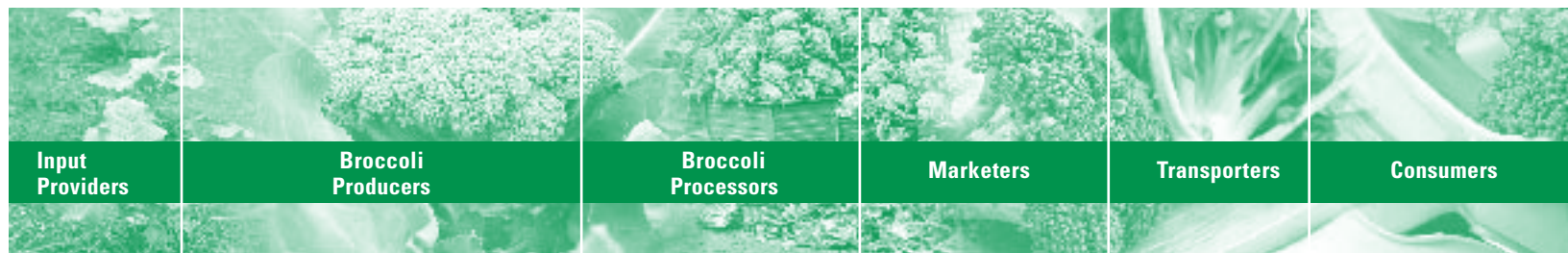
Relationships among the different actors

- What is the form of payment at each step in the chain?
- What is the relationship among the different actors in the chain (and why)?

Support services

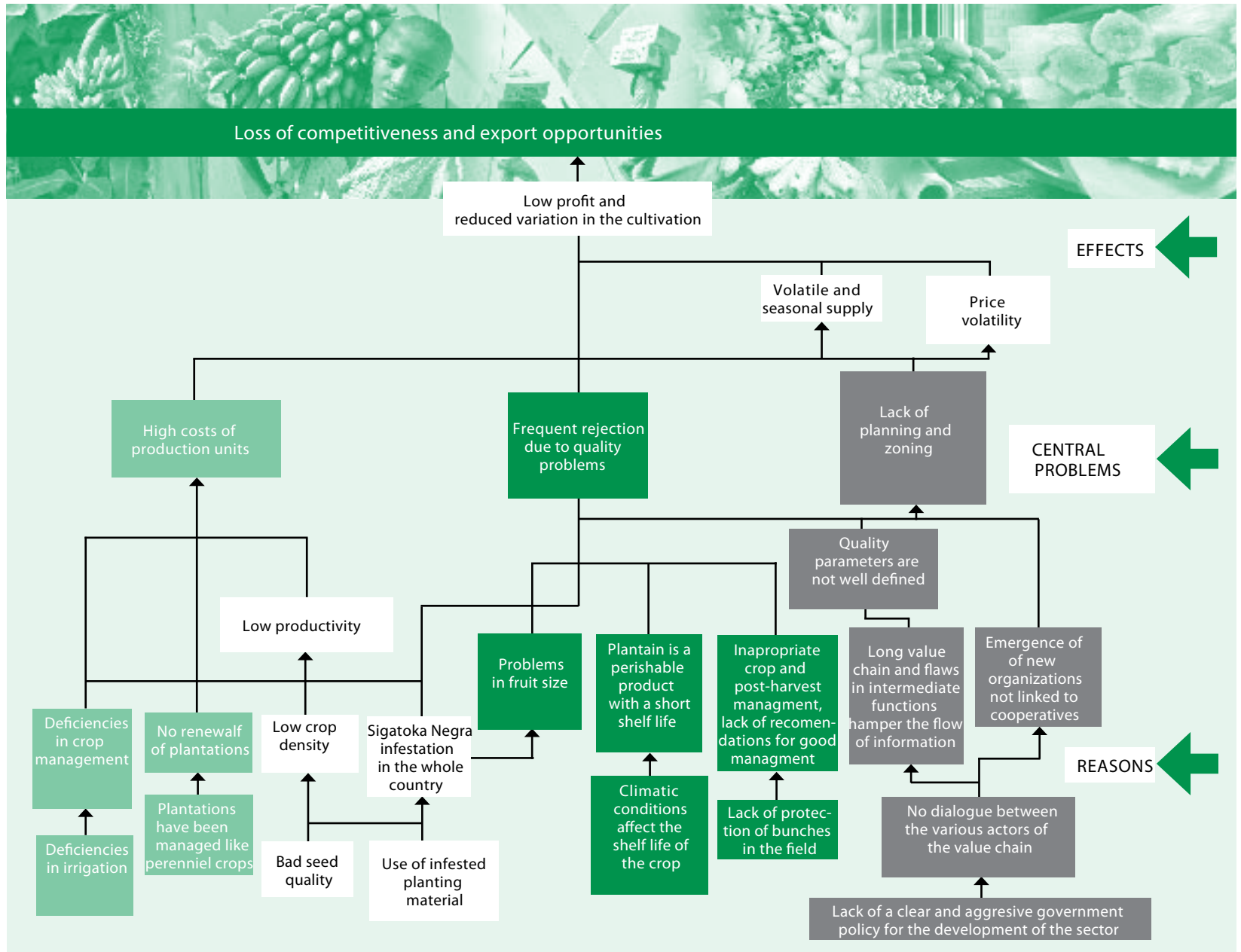
- Who offers support services to the agricultural value chain?
- What services are offered?
- What is the quality of services offered?
- Which actors participate in research, technological development, and innovation?
- What is the link between the different actors in the agricultural value chain and the National System of Research and Innovation?

Figure 3: Map of the Broccoli Chain in Ecuador



Input providers(including seedlings)	Production + local transport	Processing	Marketing	Transport	Distribution in importing country
7-13% of consumer price	12-15% of consumer price	53-66% of consumer price	61-74% of consumer price	74-96% of consumer price	100% of consumer price
	Profit in production 9-41%	Profit in processing 1-79%			

Figure 4: Problem tree for the plantain agrichain in the Dominican Republic



2.2.4 Identifying Critical Technological Problems

The chain map facilitates the identification of critical points where innovations can improve business, overcome existing bottlenecks, and improve the competitiveness of the chain. This identification may be carried out by an external organization or consultant. However, it is preferable that the potential partners in the partnership participate actively in the identification of the technological problems. This can normally be achieved through holding one or more technical workshops where potential partners will jointly identify the constraints to the development of the agrichain by analyzing strengths, weaknesses, opportunities, and threats (SWOT), by undertaking a political, economic, social, and technological (PEST) analysis, or by carrying out a participatory market chain analysis (PMCA)—all of which are analytical frameworks that are commonly used for understanding market growth, business position, potential, and direction for operations.

It is recommended that in addition to identifying the technological problems, the analysis should also reflect on the causes and effects of the problems. Sketching a problem tree can be useful (see Figure 4). The problems are listed in the trunk of the tree. After a brainstorming session, the causes of the problem are identified and listed on the roots of the tree, while the effects of the problem are listed in the crown. This method not only allows for a

better understanding of the topic the partnership may focus on, it also facilitates discussion and negotiation among the potential partners.

2.2.5 Analyzing Market Opportunities

When analyzing potential points of entry for public–private partnerships in agricultural technology and innovation, potential partners should take into account existing market conditions and opportunities for marketing products in the short, mid, and long term. A prospective market analysis can help in the development of strategic visions that can be pursued by the partnership. One way to carry out this type of market analysis is to set forth the possible development pathways on existing markets and in relation to existing products as well as the opportunities arising from new markets and the possibilities of developing new and/or diversified products. The product-market growth matrix is an instrument that helps analyze different options. Figure 5 depicts an example of a product-market growth matrix for the case of plaintains.

After enumerating the different product and market-development opportunities, the steering committee needs to rate the interesting options and characterize the existing and potential markets for each of the products. In a subsequent step, the technological innovations that would

Consideration 8:
The market orients itself toward options for innovation.

be required to assure such product and market development need to be identified, though it may be necessary to bring in consultants and market-analysis specialists to do so. However, the potential partners need to participate in the process in order to orient the work, develop a sense of ownership, and anticipate the results in order to incorporate them in the design of the partnership.

2.2.6 Defining Common Goals and Designing the Partnership

Once the technological problems and market opportunities have been evaluated, the partners should have a clear picture about the common interests they share and should have the necessary basis for defining the common goals and expected results of a partnership.

At this stage, potential partners should meet in a planning workshop to make decisions about their roles and commitments. This process will also involve negotiating the partnership's financing and planning the partnership's activities (see Chapter 3). At the same time, it is important to consider the legal aspects (see Chapter 4) and organizational design (see Chapter 5). The partnership can be based on a verbal agreement, but usually a document is drafted that specifies the main elements of the partnership project, such as partner interests, the problem to be addressed, the causes and effect, the common goal, a justification for the partnership, the expected results,

Figure 5. Product-Market Growth Matrix

	Existing markets	New markets
Existing products	<p>1. Market penetration</p> <ul style="list-style-type: none"> • Fresh mango and pulp without hydrothermal treatment for national market and markets in Europe, Canada, and Colombia. • Fresh mango, pulp, and juices with hydrothermal treatment for markets in the United States, Mexico, and Chile. 	<p>3. Market development</p> <ul style="list-style-type: none"> • Fresh mango, pulp, and juices with hydrothermal treatment for markets in Japan and China
New products	<p>2. Product development</p> <ul style="list-style-type: none"> • Natural juices without water addition and higher viscosity for the national market. • Natural clarified and carbonated juices for markets in Colombia and Mexico. • Pulp with antioxidant characteristics and higher carotene content for markets in the United States and Europe. • Dry mango, carotene extract, and mango slices in clarified juice for markets in the United States, Canada, Chile, and Europe. 	<p>4. Diversification</p> <ul style="list-style-type: none"> • Natural clarified and carbonated juices for markets in China. • Pulp with antioxidant characteristics and higher carotene content for markets in Japan.

planned activities, organizational structure, and budget. It is also recommended that the contributions to be made and the expected compensation to be received by each partner be specified in the contract. Box 4 summarizes the main elements of a partnership proposal.

Box 4: Elements of a Partnership Proposal

- **Organization:** includes a description of the roles and responsibilities of each of the partners and the governing body
- **Budget:** includes the total cost of partnership, joint financing requirements, and the specification of each partner's contributions—in cash and in kind.
- **Monitoring and evaluation mechanisms:** include an examination not only of the results of the partnership, but also of the collaboration itself, including an analysis of the partners' commitments and the overall synergy effects.
- **Activities:** includes a description of each partner's activities and responsibilities as well as the mechanisms of interaction among partners.



FURTHER READING

R. Kaplinski, and M. Morris. (n.d.) *A Handbook for Value Chain Research*. Ottawa: International Development Research Centre. Open source document, available on the www.

This work is addressed to those who seek to understand and analyze value chains. It focuses on different aspects of value-chain analysis, including contextual conditions, concepts, and study methodologies.

F. Hartwich, and D. Blank. 2003. *How the public sees the private: A case study on private perceptions about public agricultural research in Costa Rica*. ISNAR Briefing Paper 71. The Hague: ISNAR. Open source document, available on the www.

This essay analyzes the private sector's perception of the capacity of the public sector—that is, research centers and universities—to offer a relevant service to improve the situation of a chain. It is useful for public-sector agents who want to build partnerships with the private sector since it provides insights into the private-sector rationality.



Chapter 3: Financing Partnerships

PURPOSE

The purpose of this chapter is to show how partnerships can be jointly financed by various public and private partners in collaborative “give and take” arrangements. The chapter discusses the different sources and modalities of financing; in particular, the form and transparency with which the modalities are used will contribute to the partnership’s success.

LEARNING OBJECTIVES

- To identify the funding sources for public–private partnerships and to examine how these sources impact the type of partnership that is established.
- To understand that partnerships require contributions from public as well as private partners.
- To understand that optimization and transparency in the management of funds is critical for the partnership’s success.

In most cases, neither public- nor private-sector actors will contribute funds to a partnership if they are not sure they will obtain a profitable result. This is why the public–private partnership-building process requires pre-investment from one side or the

Consideration 9:
Initial resources are needed to identify the common interest and develop the partnership proposal.

other to cover the cost of the initial discussions and of the identification and negotiation of the common interest (as described in Chapter 2), as well as of the compilation and analysis of information to support an initial partnership

Box 5: Failure of a Potato-Improvement Partnership in Costa Rica

In Costa Rica, market conditions have long led buyers and processors to try to find ways to improve primary potato products. In 2004, a university research center and a public research institute both had at their disposal a set of new potato varieties from abroad whose usefulness had not yet been tested under the local conditions in the country. Several private-sector agents—including seed producers, farmers, processors, and wholesalers—finally agreed to support the testing of the potato varieties with regard to their yield and organoleptic and processing quality. The agents were going to provide financial support and also carry out adaptive tests in their fields and production and storage plants. The partnership even found an external funding source in the form of a competitive grant. The only condition was that the two research centers needed to collaborate in order to allow testing across all varieties. Various meetings were held to plan joint activities and develop a testing protocol, but the two research institutions could not agree on how to organize the activities and redistribute responsibilities and funds. One of the partners claimed it had more technical excellence and therefore should assume more responsibility in the work, while the other argued that it had the public mandate to contribute the development of the sector and should therefore have authority over the management of funds. In the end, these differences were never resolved and the partnership failed.

proposal. These costs are not necessarily high and can be borne to a large extent by in-kind commitments. However, in this phase, “seed funds” from external donors and government or visionary private-sector organizations can be very helpful for the building of the partnership.

Once the public and private partners have identified the area of common interest, they can begin analyzing and negotiating the resources required to carry out the proposed work. As shown by previous evidence from partnership-building processes in different Latin American countries, the negotiation of the contributions and the redistribution of benefits is one of the most conflictive aspects in the process (see Box 5).

Some people may be interested in partnerships because they think and/or hope that the other partners or external donors will pay for everything. The partnership’s success will largely depend, however, on the commitment and contributions of all the partners.

In a partnership in which all partners contribute, the use of funds must be a transparent process that satisfies the partners need for monitoring and maintains the confidence in the partnerships. It is also important that the management of funds assures that resources are available at the appropriate time and distributed in the appropriate way in order to assure carrying out of the partnerships activities.

Consideration 10:
A partnership is a cost-sharing arrangement that can work only when all the partners make commitments. Partners who believe others should finance the partnership should not participate.

In less-developed countries, private-sector actors such as small producers, small enterprises, and medium-sized agro-industrial companies frequently tend to limit their involvement to financing joint projects with public-sector research organizations, for two reasons: One is that many private-sector actors think in the short term, focusing on existing activities and products, and those who might take a longer view may not be profitable enough to reinvest in the development of innovations for new and at times, risky, businesses. Many businesses cannot take a strategic view of research and development (R&D), for example. Second, private-sector agents consider R&D to be the responsibility of the state; the idea that the state must help local companies innovate still predominates.

Consideration 11:
The financing of a partnership should be clear and transparent, and should specify the contributions of all partners and how the contributions will be directed to the various activities that will be conducted under the partnership.

The rates of private-sector investment in R&D in general are very low in Latin America. For the case of agriculture, Byerlee and Echeverría (2002) note that private investment in Latin America is less than 10 percent of total investment in R&D, contrasting with nearly 50 percent in developed countries.⁴ Nevertheless, according to Beintema and Pardey (2001), private investment in R&D has increased rapidly in some countries in recent years, especially through funds derived from levies placed on certain products.⁵

⁴ D. Byerlee and R.G. Echeverría. 2002. *Introduction to Agricultural Research Policy in an Era of Privatization*. Oxfordshire, U.K.: CAB International.

⁵ N. M. Beintema, and P. G. Pardey. 2001. “Recent Development in the Conduct of Latin American Agricultural Research.” Paper prepared for the International Conference on Agricultural Science and Technology, Beijing, November 7–9.

Box 6: Who Contributes What?

The PPP project found that in 101 partnerships in 12 Latin American countries, private funds constituted 34 percent (an average of \$US171,000 per partnership) of the total amount of funding of the projects of \$27.5 million. Of the private funding, 55 percent came from businesses and the remaining 45 percent came from producers associations. However, the private sector also provides significant in-kind contributions in the form of time and the use of private-sector facilities.⁶

There is evidence that the contribution of the private sector to overall investments in agricultural research increases with the establishment of public–private partnerships, provided that the private sector has confidence in the partnership and trusts the partners. The PPP Project found that the private-sector contribution across a large number of public–private research partnerships in Latin America accounted for around 34 percent (Box 6). There are also cases where private contributions reach even higher levels via certain collaborative funding mechanisms such as competitive grants.

In particular, the private sector has been found to invest in partnerships in situations where (i) there is strong pressure to improve the quality of primary agricultural materials, (ii) there is pressure to improve the cost structure of product-transformation processes, (iii) the product is exportable to high-value markets, and/or (iv) there is confidence that the public partners will appropriately manage the funds. The

private sector has invested significantly in R&D for the malt and beer sector in Chile, Mexico, and Uruguay; the rice sector in Chile; the wheat sector in Uruguay; the palm oil sector in Colombia; the lemon sector in Brazil; the soy and coffee sectors in Mexico; and the main commodity seed sectors in Argentina and Brazil.

3.1 ORIGIN OF FINANCING

Traditionally, public research in Latin America is financed through government funds and indirectly through loans and grants to governments by international development institutions. Specific donor institutions that fund agricultural research and development following their specific goals and interests also make a contribution. The private sector in Latin America accounts for substantial investments in the development of agricultural production and processing, but its contributions to financing agricultural R&D are often limited.

Funding sources always have important implications for R&D partnerships. On the one hand, the origin of the funds often determines the type of partnership, its timeframe, and the results and innovations it aims to obtain. On the other hand, it is important to analyze the partnership's goals, objectives, and activities and in light of those, to identify sources of funding that are most appropriate to fund certain activities. The next section discusses various sources of funding for research partnerships.

⁶ F. Hartwich, C. González, and L-F. Vieira. 2005. *Public-private partnerships for innovation-led growth in agrichains: A useful tool for development in Latin America?* ISNAR Division Discussion Paper 1. Washington, DC: International Food Policy Research Institute.

3.1.1 Private-Sector Contributions

These are contributions by private companies, individual producers, and farmers and other associations. Well-positioned and large companies usually have their own R&D departments as part of their strategy for innovation. However, the majority of small- to medium-size businesses and producers who do not carry out R&D on their own can hire external services or consultants. Associations representing producers' interests, such as an association of milk producers or fruit exporters, for example, may use common funds to invest in R&D to foster sectorwide development. However, their budgets usually are not very large and the focus is often on more direct ways of providing service to their members. In some countries where governments pursue fiscal policies to foster innovation, private-sector contributions to R&D are partially tax deductible.

In general the private sector tends to invest in R&D when the results can be appropriable (such as in the seed sector and in the development of processing technology, both of which are protected through intellectual property rights), when the results can be achieved in shorter rather than longer timeframes, and when the investment looks as if it will have a positive cost–benefit ratio.

3.1.2 Public Funds

These are contributions by different levels of government (federal, state, provincial, or municipal). Generally, public funding are assigned to ministries responsible for agricultural development and/or science and technology. They can also be assigned to parastatal organizations, public research

institutes, and universities. Often the funds come from the treasury or ministry of finance and in this case, the use of the funds is usually subject to government oversight and accountability rules. This is especially the case for employee salaries and infrastructure maintenance in government institutions. Sometimes, public research institutions also receive special funds for carrying out basic research activities within their mandate. In any case, there are usually a number of specific public funds for R&D. These include:

- Funds from ministries of science and technology. Generally, these funds are aimed to support basic research and technological development, taking into account scientific excellence, possible impacts, and uptake in industries. In some countries, there are national science and technology councils that manage funds for science and technology, whether independently or under the control of the respective ministry.
- Funds from the ministry of agriculture. Generally, these funds are dedicated to programs that promote agricultural development via improved farm technology, agronomy, plant and animal health, and natural resource management. These funding programs usually focus on applied solutions to sectoral development problems.
- Funds from the ministry of finance or economic development. Frequently, these funds are aimed at the development of specific sectors, clusters, or territories and focus on improved competitiveness, employment,

the promotion of exports, the development of foreign investment, or the development of local and global value chains.

Another issue is that public research organizations can be too large in structure and in number of employees, relative to the few funds that they receive. Often they lack operating funds that would allow them to implement R&D projects beyond the projects carried out under the previously mentioned external funding sources and grants. As a result, they are unable to respond to the wider spectrum of demands from stakeholders, particularly at a time when the focus has recently become oriented toward more complex innovations and environmental management.

3.1.3 Commodity Funds

Commodity funds can be created based on a mandatory tax or a voluntary fee that the government or a commodity association imposes on all producers. These are levied against farm sales, cropped areas, or export revenues. These funds can be administered by commodity associations with the authorization and under the supervision of the government. The funds collected in this way can then be dedicated to purposes such as technical assistance, marketing, the distribution of information on the market, the training of associations, and R&D.

Commodity funds are created as the result of agreements among the stakeholders in a commodity chain or of government initiatives. Many coffee-producing countries have set up a coffee commodity fund, for example, and

in Colombia, private-sector agreements to foster competitiveness (*acuerdos de competitividad*) have been prominently implemented for a wide range of commodities, requiring producers and processors to dedicate a share of their income to a general commodity fund that invests

in chain development and research. Their contributions are matched by public funds for R&D. In Costa Rica, there is a sector agreement in the banana sector to implement an export tax. The funds raised from the tax, which are not complemented through public sector financing, are used to carry out research in the sectors' development center, the National Banana Corporation.

Consideration 12:

The application of levies to a commodity is a useful mechanism for raising funds. Such funds can become a basic source of funding R&D for the development of the commodity chain and the formation of public-private partnerships.

3.1.4 Development Funds from Development Organizations and International Foundations

Generally, multilateral donor institutions such as the World Bank, the European Union, and the Inter-American Development Bank channel funds for agricultural R&D through specifically developed government programs involving state agencies and ministries. Funds are also obtained through bilateral development cooperation agencies, which target specific development problems prioritized by the agencies. Foundations such as the Rockefeller, Kellogg, or Gates Foundations, which dedicate private funds to non-profit development purposes, are another source of

funding. Generally, the goals of all these organizations are altruistic—contributing to the economic and social development of developing countries and emphasizing environmental sustainability and/or the mitigation of poverty. In recent years, most of these organizations have also introduced private-sector development policies that stress the private sector’s role in complementing public-sector investment in R&D.

Box 7: Competitive Fund for the Improvement of Rice in Mexico

The Fundación Produce in the Mexican state of Morelos receives funds from the government on the national and state levels, from private sources within the state of Morelos, and from international sources. It assigns those funds to research and technology-transfer projects through open bidding processes. One project the Foundation has financed is the creation of hybrids in the rice sector, which has faced the effects of recent free-trade agreements where lower market prices require lower production costs. In 1998, the Morelos Rice Research Board (Patronato para la Investigación del Arroz en Morelos A.C.) established a partnership with plant breeders from the experimental research station Zacatepece of the National Institute for Forestry, Agriculture, and Livestock Research (Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, INIFAP) to seek financing from the Fundación Produce’s competitive grant scheme for the production of hybrids. The Rice Research Board—a private producers’ organization conscious of the need to reduce production costs—contributed funds to the partnership by collecting voluntary contributions from its producers of fifty cents per ton of rice produced. For five consecutive years, the Rice Research Board/INIFAP partnership competed annually for and received funding from the Fundación Produce, paving way toward the establishment of a successful rice-improvement program that produced its first hybrid seeds in 2004.

3.2 ALLOCATION OF FUNDS

Funds can be transferred to partnerships through different mechanisms, including

- **Direct assignment:** The funding agency transfers funds directly to the beneficiaries. It usually identifies an executing agency (or partner) and sets up a specific research contract. Direct assignment is principally used by companies and private organizations; the government rarely assigns funds in this manner. Direct assignment is only useful when the funding organization has developed clear criteria for the assignation of funds and/or is able to identify research providers who can efficiently perform the assigned task.
- **Competitive grants—open invitation:** Competitive grants can be freely accessed by public- or private-sector research actors who meet the criteria established by the funding agency. The agency normally makes a public announcement and invites research organizations to compete in the bidding process (see Box 7). This is the preferred mechanism for allocating public funds for research. Its advantage is that it provides transparency in the assignation process and spurs competition and identifies the best candidates.
- **Competitive grants—closed invitation:** In this case, the funding agency invites a limited number of institutions to participate in the bidding process. This mechanism is used when only a few research providers have the required capacity in a certain subject field.

3.3 FINANCING AND NEGOTIATING THE PARTNERSHIP

A public–private partnership is successful or sustainable not only because of the amount of funding it receives, but also because of the conditions attached to the funding that ensure its efficient use. It is important that the partners agree how the funds will be disbursed and used. The following section discusses funding considerations that should be discussed during the process of negotiating the partnership.

3.3.1 Type of Resources and Amount of Contributions

A collaborative research project brings together different types of resources such as human and financial resources and physical infrastructure, and the costs of those resources—whether monetary or in kind—need to be included in the calculation of each partner’s contribution. These calculations also provide a basis for redistributing costs among the partners if the burden becomes too much for one of them.

Consideration 13: Different types of partners provide different types of resources. In calculating the overall cost of a partnership project, one should include not only operational expenses, but also the costs of human resources (basically the time people invest in the partnership) and infrastructure (the facilities people use).

- **Human resources** are all those individuals who bring their capacity to the partnership, including researchers, technicians, field personnel, administrators, project managers, facilitators, and others. In most

of the partnerships studied by the PPP project, the public sector—represented by universities and research institutes—primarily contributed human resources. Often, the costs of human resources such as the salaries of researchers do not feature in partnership negotiations. However, a consideration of the time and effort individuals devote to the partnership’s activities would avoid underestimating the participation of some of the partners, such as the public research partner. A similar consideration should be given to private-sector partners who involves their technicians and staff. Sometimes, public entities commit to too many partnerships, thereby undermining the credibility and confidence of partners and putting the partnership itself in danger.

- **Infrastructure costs** include the cost of equipment, laboratories, technical plants, experimentation fields, and other installations used in the partnership. They also include rent and the depreciation of equipment and facilities. Of course, infrastructure costs should only be calculated to the extent that the infrastructure is actually used for partnership activities.
- **Operating costs** include costs for farm inputs such as fertilizers, seeds, materials, fuels, services, and other daily expenses that occur in the course of conducting the partnership. They are variable costs that occur when using the other resources assigned to the project.

The partners’ contributions may be in cash or in kind, and it is important that the negotiations take into account both types of contributions. Figure 4 offers an example of the

Figure 6: An Example of Contributions for the Negotiation of Partnerships

Type of resources	Sources of financing			Total
	Research institute (public)	Public fund (public)	Producer's Association (private)	
Human resource costs	40	0	10	50
Infrastructure costs	10	0	10	20
Operating costs	0	25	5	30
Total	50	25	25	100

Box 8: Who Pays for What?

The PPP project found that in 101 partnerships in Latin America, the public sector contributed on the average 78 percent of the cost of human resources, while the private sector contributed 90 percent of operating costs.⁷

calculations of partner contributions that can serve as a basis for negotiation.

Partnerships can require that partners cover their own costs, though this frequently leads to problems in covering the necessary operating costs. Therefore, in most cases, one of the partners or an external donor partially covers the operating costs. Costs also arise from the administration of the partnership, especially when external funds have to be managed. Generally, public-sector institutions contribute

more human resources, while the private sector pays for the operating costs (see Box 8); public research centers and universities normally have the salaries of their employees covered by the state, for example, but require (project) funds for operation. Also, the private sector is not usually willing to pay for workers employed by the state. If the private sector agrees to pay for researchers' time, it does it principally for the provision of specific personalized services outside a partnering context. Nonetheless, it is possible that the private sector will gradually increase its contributions as the partnership matures.

3.3.2 Appropriation of Results as a Basis for Negotiation

In the negotiation process, the partners will consider their contributions as a function of the benefits they expect from the partnership. The latter will depend on the nature of the research and innovation in which the partnership engages. The public-sector partner will logically gravitate more to the generation of public goods and services and making those available to a broader community or population. The private-sector partner will be interested in results that lead to goods and services that can be sold at an attractive price to preferred customers and/or in results whose intellectual property can be protected and to which exclusive user rights or royalties can be applied. The classic example is an improved seed variety that a company develops through a genetic improvement program: the variety is protected with a

⁷ Hartwich F., C. Gonzalez and L-F. Vieira. Public-Private Partnerships for innovation-led growth in agrichains. A useful tool for development in Latin America? ISNAR Discussion Paper No. 1, IFPRI, Washington, D.C., USA, 2005.

patent, which keeps others from reproducing the seed unless they pay the respective users rights. In some country contexts, however, it may be difficult to stop illegal reproduction.

R&D partnerships generate results that the different partners will find useful in different ways. Therefore, it is important to establish from the outset of the partnership clear criteria for the distribution of benefits that occur from those results and to create mechanisms for their appropriation. This will help avoid future conflicts about the distribution of the fruits of the partnership that could jeopardize the continuation of the partnership. Clear rules on the appropriation of benefits also can be designated in the partnership's legal agreement (see Section 4.3). To get a better idea of a partnership's benefits, it may be useful to obtain an assessment of its potential impact by neutral consultants. Similarly, for private-sector entities, an ex ante analysis of costs and benefits may be useful.

Consideration 14:

In case of doubt about the social benefits of a partnership, the public sector should seek ex-ante evaluation of its impact.

3.3.3 Delivery Time

As with any project, it is important to ensure that resources are continuously available to carry out the technical and administrative activities according to plan (see Box 9). Some resources are more available at certain times of the year than at others. For example, some small businesses can only sell their products seasonally and may not be able to contribute

to the project during the low-sales months. Because agricultural research involves substantial biological on-farm experiments that are themselves dependent on

Consideration 15:

Public and private partners need to commit to contributing resources in the amount and timeframe that was agreed upon. This assures that the planned activities are carried out without delay, which contributes to partner confidence and ultimately to the success of the partnership.

Box 9: A Partnership for Good Agricultural Practices in Venezuela—Stymied While Waiting for Funds to be Disbursed

An agronomy research center at a Venezuelan university received funds from a philanthropic foundation to carry out a two-year project to develop a protocol for good agricultural practices for an important smallholder crop. The center had little experience with funding from private sources. After signing the contract, the university administration began to review the university's regulations regarding the use of private funds. Although the university's regulations did not prohibit the use of this type of funding, the university senate requested that the project's possible social benefits be reconsidered. During this phase, no operating funds were released and the first planting season was lost. The administration gave its approval in time for the second planting season, but so many administrative and control measures remained that only parts of the funds could be disbursed. Under these circumstances, the project could not accomplish the set objectives and the planned activities were not carried out. In the end, a significant amount of funds was not used and had to be returned to the foundation.

seasonalities, delays in the availability of operational funds can jeopardize achieving the expected results.

In public-sector organizations, decisionmakers frequently come and go. Therefore, it is important that the partnership not be tied to one decisionmaker in an organization; instead, it should seek overall organizational responsibility to guarantee continuity.

3.3.4 Financial Responsibility and Monitoring

In most partnerships that receive private funding, the funds are administered by the public research institutions according to their own regulations. There is ample evidence that many public institutions are too bureaucratic and that their administrative procedures prevent researchers from using resources more efficiently. It is therefore desirable that when public research centers assume administrative responsibility in a partnership, they revise their procedures to allow for quick and transparent decisionmaking. In the case of larger partnerships, a separate and autonomous administration should be established. Also, in cases where the private-sector

partner needs reassurance about how the funds are being used, it is recommended that an independent management unit for the partnership be established.

Setting up appropriate monitoring and evaluation mechanisms for the use of funds should be considered right from the start of the partnership.

Monitoring should not be the sole duty of the administering organization or unit, but should be undertaken jointly by the leaders of all the organizations involved in the partnership. It is

designed to assure that established goals will be achieved in an efficient way that is consistent with the financial rules and norms. An important monitoring mechanism is the submission of reports and meetings on the progress and results generated by the partnership's activities. To the extent that the transparency of resource use is improved, monitoring will help consolidate mutual respect and trust among the partners.

Consideration 16:
Financial administration in partnerships should be transparent, thereby generating mutual trust among the partners.



FURTHER READING

Echeverría, R., and H. Elliott. 2002. Financing agricultural research by competitive funds. In *Agricultural Research Policy in an Era of Privatization*, ed. D. Byerlee, and R. Echeverría. Wallingford, UK: CAB International.

This essay considers the role of competitive funds in agro-industrial research and discusses when they constitute a viable option by analyzing the advantages and disadvantages. The article also develops criteria to measure the performance of competitive funds.

Estrada, R., R. Posada, and F. Holmann. 2004. *Agricultural research private funding: The Colombian experience*. Cali, Colombia: Condesan. Open source document, available on the [www](#).

This discussion paper analyzes how the private sector in Colombia financed agricultural research at different historical phases. For each phase, it studies the motivation of the private sector, the mechanisms it used, the type of actors who were involved, and the short- and long-term benefits that resulted. It concludes with an outlook on what is required in the future to sustain the private sector's involvement in agricultural R&D.

D. Hoole. 2002. "Who Finances, Who Delivers." Paper delivered at European Forum on Rural Development Cooperation, Montpellier, France, September 4–6. Open source document, available on the [www](#).

This article explains the difference between public and private goods in agricultural R&D and how public and private entities can contribute to their financing and generation.



Chapter 4: Legal Implications

PURPOSE

The purpose of this chapter is to identify the relevant statutory, regulatory, contractual, and property rights issues that affect public–private partnerships for agricultural innovation.

LEARNING OBJECTIVES

- To understand the regulatory framework surrounding public–private partnerships.
- To reduce concerns that potential partners may have regarding the legal requirements associated with getting involved in a partnership.
- To learn about simple tools that can help formalize partnership agreements.

Legal aspects influence the creation and functioning of partnerships and should be thoroughly discussed from the beginning of the partnership-building process. Many partners may be wary of joining partnerships because they do not understand the legal implications and because information on these issues is scarce. It is therefore important to create awareness and strengthen capacities in legal matters associated to building partnerships, which helps potential partners to understand what they are getting involved in, reduces uncertainty, clarifies potential risks, and helps in the negotiation of the partnership agreement.

The legal aspects of partnerships are fairly straightforward. Partners should particularly focus on three areas:

- The legal framework of acts and laws that regulate, delimit, and complement contractual agreements among partners.
- The specific legal tools that exist for forming partnerships: contractual agreements, temporary unions or consortia, and the creation of new legal entities that can emerge out of a partnership.
- Intellectual Property Rights (IPR), which must be taken into account when appropriating the results and benefits of innovations generated within partnerships.

4.1 REGULATORY ISSUES

There are several predetermined national and international regulatory frameworks with set norms that need to be considered when forming a public–private partnership:

- Government policies and laws regarding development in the agricultural sector and in science and technology and R&D, including specialized areas such as biotechnology, experimentation with live animals, and the use of chemicals.
- International agreements on intellectual property regimes ratified by countries (and thus transformed into national law), such as those related to the World

Intellectual Property Organization (WIPO), the Paris Convention for the Protection of Industrial Property, and the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS); regional ones such as those

involving the Andean Community of Nations; and bilateral ones such as free-trade treaties between various Latin American countries and the United States.

- Intellectual property agreements for genetic plant resources, such as the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPFGA), the International Plant Protection Convention (IPPC), the International Undertaking on Plant Genetic Resources (IU), and the International Union for the Protection of New Varieties of Plants (UPOV).
- Norms on the contracting and performance of services between public and private institutions, including aspects of arbitration and conflict resolution, representation, and civil responsibility.
- Regimes that can encourage the building of partnerships, such as taxation-exemption measures or measures that allow for the collection of levies from private-sector agents in order to fund partnerships.

Consideration 17: International conventions on intellectual property, biodiversity, and access to genetic resources should be considered as part of the regulatory framework for agricultural innovation partnerships.

In general, regulatory frameworks are not an impediment to the formation of partnerships, and in fact, they can support the partnership-building process (see Box 10). However, regulatory frameworks can at times impede the conduct of partnerships and the pursuit of specific objectives. This is the case, for example, when there are overly complex norms that require excessive documentation or when partners agree on objectives that are not compatible with national legislation, such as the development of genetically modified crops

Partners have frequently complained that the regulatory framework can be problematic, such as when universities are not allowed to receive payments from private companies or when public research organizations retain intellectual property rights over commonly developed technology. The findings of the PPP project, however, indicate that in many cases the regulatory framework does not stand in the way of building partnerships; it is usually possible to negotiate around any roadblocks if the benefits of the partnership are high enough to allow for their redistribution among all the partners. The complaints, though, may very well reflect a concern about the unknown risks involved in entering a partnership as well as a lack of confidence in defending the particular issue vis-à-vis figures of authority.

In any case, interested partners should seek legal advice from those who have partnership-building knowledge—not only lawyers but also practitioners with experience in collaboration and legal agreements. Generally, public research and private business organizations have a legal unit that reviews any agreements to which the organization may be a party. Nevertheless, lawyers at times have a less clear understand-

Box 10: Lack of Environmental-Protection Legislation

The absence of legislative norms can complicate the development of public–private partnerships. This occurred in Uruguay, in the case of a partnership between the National Institute for Agricultural Research (Instituto Nacional de Investigación Agropecuaria, INIA) and the meat industry, which aimed to produce certified organic meats. Non-organic meat ended up being channeled into the production chain, and it was only after legislation was enacted to protect organic production and set standards for certification that the country could start exporting organic meat.

a complex collaborative research agreement, including intellectual property, royalties, and social benefits. They would therefore need advice from researchers and economists who have a better idea of research costs, the value of the products to be obtained, potential benefits, and the possible economic, social, and environmental impacts. Agreements should be reached as the result of negotiations involving different types of professionals—not just lawyers—in order to reduce the risk that collaboration opportunities with significant potential benefits would be rejected solely because of legal concerns.

4.2 CONTRACTUAL ISSUES

Partnerships are established by means of a verbal or written agreement among the partners, which is subject to the country's contract law. A partnership contract establishes the basic rules for the partnership. To help ensure a successful partnership, it is essential that the contract be very clear and that it provide for continuity and security to safeguard the

interests of all partners. Contractual agreements to form a partnership can take different forms. Three examples are listed below:

- **Memoranda of understanding or framework agreements:** These documents are of general character and content and list the partnership's goals, the partners involved, their possible obligations, mechanisms for the resolution of conflicts, and the administration of intellectual property. These types of agreements are used for the development of multiple projects.
- **Letters of understanding or specific agreements:** These documents specify the partnership's operations in greater detail, including specific activities and the partners' contributions, obligations, and guarantees. They are used to complement the general framework agreements.
- **Contracts:** These documents are more explicit and include the partners' obligations and rights. They generally are used in the context of specific projects. A valid contract requires the following elements: (1) a specification of the legal subject of the contract—the partnership—to which the partners commit to providing resources and services; (2) a legitimate and verifiable reason for the existence of the partnership, and (3) an affirmation of the free participation and/or association of the partners. The economic implications of these contracts include sharing costs, committing resources, distributing risks and benefits, and attributing property rights. The main clauses that are

typically included in such contracts are summarized in Box 11. For a generic draft contract see Appendix II.

It is often wise to avoid specifying the objectives of the partnership in great detail, since research results are often unpredictable and it is important to remain flexible in pursuing opportunities. The main idea is that the contract should promote collaboration. Therefore, it is important to keep in mind that a partnership contract should not require that specific results be obtained, but should rather specify the joint activities required to obtain the desired results.

A partnership contract does not in itself possess a legal identity that gives it rights and obligations. Therefore, a partnership that is not formalized cannot receive grants or

Box 11: Clauses of a Partnership-Formation Contract

- Specification of the partners
- Subject of the contract: the partnership
- Objectives of the partnership
- Organizational design
- Duration and termination
- Obligations and commitments of the partners:
- Means of contributing resources (financial and in kind)
- Dates of payment
- Types of activities
- Evaluation and monitoring mechanisms
- Guarantees in case of non-compliance
- Mechanisms for conflict resolution
- Agreements on intellectual property and distribution of benefits
- Breaches and sanctions

credits. There are basically three mechanisms for formalizing partnerships, only one of which establishes independent legal status. The most suitable mechanism must be determined by the partners on a case-by-case basis.

1. **Project addendum:** Certain projects funded by government and international donors specify that the main recipient needs to provide proof of collaboration with a third-party partner. In those cases, project addenda or letters of intent are developed that specify how the partners will contribute to and benefit from the project in case it gets funded. Usually, no further partnership contract is developed after the funding is received.
2. **Contractual agreements:** In its most basic form, a partnership is a contract that details agreements between the partners to carry on joint activities in pursuit of a common goal; to contribute to that goal by combining property, resources, knowledge, and activities; and to share in the profits of the partnership. Under this agreement, partners own the partnership assets together, have equal rights to manage activities, and are all personally liable for the partnership's debts and obligations. Disagreements in the ordinary course of partnership activities are resolved by a majority of the partners. Disagreements relating to extraordinary matters and amendments to the partnership agreement require the consent of all partners. If a partner is the principal agent carrying out the activities of the partnership, the other partners can be held liable for his or her dealings with third persons. The agreement also specifies how profits and

losses are to be shared. Finally, the contract usually includes a declaration of partnership, which in some countries can be registered and made available for public inspection.

3. **Temporary union or consortium:** A consortium is formed by a contract that delineates the rights and obligations of each member. It usually ceases to exist when the specific project for which it was created ends. Each partner retains its separate legal status, and the consortium's control over each partner's resources is generally limited to activities involving the joint endeavor and the division of profits resulting from it. Consortia are particularly common in the nonprofit sector, where they are often favored over corporations for taxation purposes.
4. **New entity:** In some countries, a partnership can also become a legal entity, usually in the form of a permanent not-for-profit organization. This unit does not cease to exist when a research project is completed, but can carry out an infinite number of projects that match the entity's principal objectives. The legal establishment of such a joint venture is usually a long and complicated process and requires the influx of capital from the partners. However, the partnership's independent legal status can help it manage the influence and bias of partners, develop coherent activities and efficient management structures, and be accountable to its owners through boards and assemblies. Some countries' legislation provides for special types of part-

nerships: "limited partnerships" are arrangements in which some partners transfer their right to manage activities in exchange for limited liability for the partnership's debts, for example, while "limited liability partnerships" are arrangements in which all partners have some degree of limited liability. This kind of legislation is not very prominent in developing countries.

In the event that a partnership generates intellectual property results, it can be beneficial to develop two contracts—one that addresses the research that is conducted under the partnership and assigns the intellectual property rights, and one that is a commercial development contract that regulates the use of the intellectual property results, including royalties, which are a percentage of the gains of a commercialized product that is granted to the owner of the proprietary rights.

4.3 INTELLECTUAL PROPERTY ISSUES

R&D partnerships can lead to results that may fall under the auspices of intellectual property legislation. The term "intellectual property" refers to the legal entitlements attached to products of the mind or the intellect, such as names, written and recorded media, and inventions. The holders of these legal entitlements retain exclusive rights to the products. In partnerships, the issue of intellectual property depends partly on the degree to which the R&D results of the partnership are public or private goods.⁸ For example, knowledge on optimized crop management, which is often considered a public

⁸ The two characteristics of a public good are 1) that its consumption by one individual does not affect the consumption by others; and 2) that no one can be effectively excluded from its use.

Box 12: Non-Appropriable Partnership Benefits for Cashew Exporters in Brazil

In Northern Brazil, a partnership was formed between the Brazilian Agricultural Research Corporation (Empresa Brasileira de Pesquisa Agropecuária, EMBRAPA), a cashew export company, and several small producers' organizations with the aim of developing a processing technology for small cashew processing plants. EMBRAPA accessed existing technology and knowledge and carried out adaptive research and development. The export company contributed knowledge about quality requirements for the international cashew market, and the producers implemented and experimented with the technology in their processing plants, thus acquiring knowledge about the required quality of the raw material in optimization of processing. However, the export company, which to a large extent financed the partnership's activities, was not interested in patenting the new technology. It was more interested in obtaining a better quality and greater quantity of product so that it could increase its earnings from exports.

a semi-public character in the context of applied R&D such as is typically conducted via a public–private partnership because it does not have the same usefulness for all people, particularly for those who are not part of the partnership. On the other hand, improved open-pollinated seed varieties, whose use by the third parties cannot easily be excluded, become semi-private goods.

Only fully appropriable research results that are private goods can be protected through intellectual property agreements, and these constitute only a small proportion of the goods and services that public–private partnerships can generate. Among the many partnership cases studied by the PPP project, less than 10 percent of the partnerships had to

deal with the protection of intellectual property. In fact, the project found that the private-sector companies, many of which were processing and marketing primary agricultural products, were entering partnerships not because they were interested in results that could be intellectually protected or patented, but because they found the partnership to be a way to improve knowledge and technology in the primary production on which they depended (see Box 12). An exception to this was when seed-producing companies partnered with public research organizations.

Classic public-policy thinking suggests that the development of innovations and the disclosure of knowledge into the public domain can be encouraged by intellectual property rights, that is by granting authors and inventors exclusive rights to exploit their works and capitalize on their investments, thereby preventing the appropriation and use by third parties of the resulting products and processes for a limited period of time. From an economic perspective, the attribution of intellectual property creates a temporary monopoly on the use of a knowledge or good and is justified because it removes market failures that result from the public-good nature of knowledge goods.

However, there is ongoing debate as to whether the protection of intellectual property always generates social benefits since it excludes many from using the good or makes it more costly to use it. One argument, for example, is that at least at the beginning of the development of a technology, it is beneficial for a wide range of agents to have access to the technology so they can all contribute to its further development; the attribution of property rights

to one private-sector agent can impede joint learning and technology development. There are also doubts as to whether the protection that intellectual property rights provide is appropriate in the context of innovation derived from traditional knowledge.

Many governments stipulate that intellectual property that results from any activities in which public agencies or funds are involved has to be attributed to the public. In some countries, however, there are public agencies that allow for the attribution of intellectual property to the private sector if it can be shown that this brings social benefits or that a sufficient portion of the profits are transferred to the public via royalties or other user arrangements.

Intellectual property rights include:

- **Authors' rights**, which regulate the use of a particular expression of an idea or information and protect the author's moral right to any literary, artistic, or scientific creation, thought, or piece of art. In most cases, these rights are of limited duration. Authors' property is usually identified with the term *copyright* and the symbol ©.
- **Industrial property rights**, which protect applications in industry or trade through:
 - *Patents*: exclusive rights granted by a state to an inventor for a fixed period of time in exchange for the disclosure of an invention. In general patents, prohibit others from making, using, or selling the product in which the invention is embodied if the inventor does not authorize it.

The procedures for granting patents vary widely between countries according to national laws and international agreements. Commonly, a country forms a patent office that is responsible for operating that country's patent system under the relevant patent laws. Novelty, usefulness, industrial applicability, marketing potential, and legality are typical conditions for which patent offices grant patents (see Box 13). Patents cannot be granted if knowledge exists in the public domain that is equivalent to the process or product for which a patent is sought. It is important to note that patenting in one country does not guarantee protection in other countries; hence, it is advisable for the inventor to file patents in all countries that might potentially use the invention.

Box 13: Patent Negotiation in a Partnership to Develop Milk-Fermentation Technology in Argentina

In Argentina, a partnership was established between a milk processing company, a research center specializing in the use of Lactobacilli bacteria, and the National Council for Scientific and Technical Research with the goal of developing a technology for milk fermentation that would reduce diarrhea in children. The interest of all partners in claiming the intellectual property right for the technology for their own use and economic benefits led to extended negotiations, which touched on the point of the distribution of the intellectual property, ownership, patenting, royalties, and distribution of costs, not all of which were satisfactorily settled in the initial partnership contract.

- *Utility models*: grant exclusive use for a limited time so that the inventor can sufficiently teach people of ordinary skill to use the invention. Utility model laws exist in national legislations, such as Argentina, Brazil, Chile, China, Japan, and many European countries. Though utility models are similar to patents, they are especially suited to protect incremental inventions through defining the way a certain artifact is to be used in practice.
- *Industrial design rights*: protect the external configuration, shape, or pattern of color; that is the visual design of objects such as work tools, machinery, and buildings. The requirements are less rigorous than those for patents, and the protection period is shorter.
- *Trademarks*: protect words, phrases, names, symbols, logos, designs, images, or a combination of these elements as a unique identification of a product's or service's origin or source distinguishing it from other products. The trademark is associated with the symbols ® and ™.
- *Geographical identity*: protects a name or sign corresponding to a specific geographical origin, preventing third parties from using processes and producing products under the same name. It can be seen as certification for certain product qualities due to their geographical origin.
- **Trade secrets**, which constitute confidential information concerning the commercial practices or proprietary knowledge of a business. They are usually formulas, practices, processes, designs, instruments, or patterns that confer economic benefit on their holders and are known only to a limited portion of the public, for which reason the holders try to maintain its secrecy. In the industrial and trade sectors, this type of intellectual property rights usually takes the form of a non-compete non-disclosure contract between a company and its employees about the use of confidential information. The protection provides companies with a monopoly over secret information, but it does not prevent a third party from independently duplicating and using the secret information once it is discovered.
- **Plant variety rights** (also known as plant breeders' rights), which protect new varieties and seeds of living plants by bestowing intellectual property rights on the breeder who developed those varieties. They give the breeder control of the new variety's propagation material (including seeds, cuttings, divisions, and tissue culture) and harvested material, as well as the right to collect royalties for a number of years. On the one hand, this protection can provide some profit to the breeder to cover the costs of research and development. On the other hand, the superior varieties thus developed can bring benefits to farmers, though the royalties included in

the purchase price may make the seeds more costly. Plant variety rights are usually less rigid than patents. For example, farmers may use their production for further use as seeds on their farm, but further sales are not allowed. Also, other breeders are usually allowed to use protected varieties as sources of initial variation to produce new varieties of plants. There are also cases of compulsory licensing to allow public access to new varieties. Plant variety rights are regulated by national law, which often follows the recommendations of the International Convention for the Protection of New Varieties of Plants. For plant breeders' rights to be granted, the new variety must be novel (not previously marketed), distinct from other available varieties, homogeneous, and stable so that the plant remains true to type after repeated cycles of propagation.

In R&D partnerships, there are three potential areas of conflict that can be resolved through the use of contractual agreements: the ownership of results from R&D, the absence of legal mechanisms that enforce property rights, and the redistribution of benefits through the attribution of property rights and royalties.

Ownership of R&D results. The moral right protects the inventor, which can only be a physical person, such as a researcher working in a research institute. However, the organization that employs the inventor usually aims to obtain an economic benefit from the use or exploitation of the innovation generated under its roof with its funds. To

avoid subsequent conflicts, the subordination of researchers to the organization should be clear from the start and manifested contractually. A special case is that of students participating in R&D projects who are not employees of the organization but who obtain results that may be commercially exploited and legally protected. Particular care should be taken to avoid

situations where the students end up better off than their professors who ceded their rights to the respective organizations.

Absence of legal enforcement mechanisms.

Intellectual property rights per se do not guarantee the protection of benefits if prosecution and legal enforcement systems are weak. This is true for seed markets in various developing countries, for example. Inadequate monitoring of rights abuses in the market, combined with weaknesses in bringing abuses to court and making courts defend the rights according to law may affect partnerships in which private companies expect returns from protecting their property rights.

Redistribution of benefits through the attribution of property rights and royalties. During the negotiation and the development of the partnership contract, it is useful to clearly define the types of public and private goods and services

Consideration 18:

The moral owner of intellectual property is the researcher, inventor, or creator, regardless of whether he or she acts independently or subordinately. Nevertheless, in most Latin American countries, such individual rights are subordinated to the institution where the R&D was carried out.

Consideration 19:

Public–private partnerships that focus on improved seeds in which the partners expect to profit from intellectual properties are likely to fail in markets characterized by informal trade. Examples where the partnerships soon dissolved because the partners could not sufficiently exploit their intellectual properties on informal seed markets include the partnership between Argentina’s National Agricultural Technology Institute (Instituto Nacional de Tecnología Agropecuaria, INTA) and a number of cotton-producing organizations, and between Uruguay’s National Institute for Agricultural Research (Instituto Nacional de Investigación Agropecuaria, INIA) and a potato-seed producers’ association.

that the partnership will generate and how any relevant property rights will be attributed. If some sort of royalty payment is agreed upon in cases of commercial success, the partnership agreement must specify which public-sector organization will monitor the royalty payments and how this will be done. Alternatively, the partners can agree up front on a fixed sum as payment for the ceding or licensing of intellectual property. As a general rule, partners should reach an advanced understanding of the value of the intellectual property that may result from the R&D conducted under the partnership; the value can be based on the future income associated with the ownership of the intellectual property, which depends on the expected time of use, amounts sold, and the net income per unit after routine sales costs are deducted.

FURTHER READING

Organization for Economic Cooperation and Development (OECD). 2003. *Turning science into business: Patenting and licensing at public research organizations*. Paris. Open source document, available on the www.

This publication documents and evaluates the regulatory framework for the commercialization of technologies developed with public research funds and analyzes the activities surrounding patents and licenses in countries inside and outside of the OECD.

B. Arrunada. 2001. The Role of Institutions in the Contractual Process. In *Law and Economics in Civil Law Countries*, ed. T. Kirat and B. Deffains. Economics of Legal Relationships Series: Routledge, UK.

This book describes the contracting process for the exchange of goods and services from various theoretical, legal, and economic perspectives.

S. Bragdon, ed. 2004. International law of relevance to plant genetic resources: A practical review for scientists and other professionals working with plant genetic resources. *Issues in Genetic Resources* 10. Rome: International Plant Genetic Resources Institute (IPGRI). Open source document, available on the www.

This document presents the most important agreements and policies for the conservation and management of plant genetic resources, focusing both on the major sources of conflict between breeders and users of seeds and on how the agreements and policies can be implemented.



Chapter 5: Organizational Design

PURPOSE

The purpose of this chapter is to demonstrate that a partnership needs an organizational structure independent of any that individual partners may have.

LEARNING OBJECTIVES

- To define criteria for identifying appropriate organizational structures.
- To understand the advantages of alternative organizational designs.

A partnership is composed of people from different public and private organizations who work together toward a common objective. Each partner organization has its own organizational design and administration. However, in order to achieve its goals, a partnership requires the creation of roles, processes, and formal reporting relationships among its members. This organizational design involves establishing overall organizational structures such organiza-

Consideration 20: The organizational structure should enable effective relationships between partners; facilitate decisionmaking, the organization of work, information flows, and monitoring and evaluation; and at times allow the partnership to represent itself as a distinguishable entity to the outside world.

tional units and the links among them, as well as focusing on operational design by defining the more detailed roles and processes. Unlike the organizational designs commonly found in companies, which are often based on hierarchies, organizational designs for partnerships need to provide sufficient autonomy to the partners and enable effective work relationships based on participation and consensus. The main characteristics of an effective organizational design include:

- **Representation:** The organizational design can allow the partnership to present itself as a separate entity to third parties such as banks, donors, potential beneficiaries, and other stakeholders.
- **Decisionmaking:** The partnership needs to be able to make decisions with regard to its orientation and strategy as well as its day-to-day operations. Such decisions can be made by individuals, committees, or by all people in the partnership. In a partnership, all partners have the right to participate in decisionmaking. The organizational design should specify who has decisionmaking power.
- **Work organization:** Partnerships involve collaborating to reach a common goal. Therefore, it is important to define how the partners will carry out the work and how they will organize their staff into teams and programs.

- **Information exchange and communication among partners:** The organizational design should enable the exchange of information and continuous communication among the partners, both of which are essential for effective collaboration and monitoring. Effective information exchange also contributes to increased confidence among the partners.
- **Monitoring and evaluation:** The organizational design can also specify mechanisms that allow the partners to monitor progress and determine if in fact the activities contribute to the achievement of the partnership's objectives.
- **The administration of financial resources:** This is often entrusted to a partner who assumes financial responsibility vis-à-vis the donor institutions. However, there are cases in which partners opt for a separate financial administration for the partnership, under the supervision of a manager or an executive committee.

5.1 CRITERIA FOR DEFINING THE PARTNERSHIP'S ORGANIZATIONAL DESIGN

Determining what form of organizational design is most appropriate depends on the type of partnership to be set up. Important criteria to be taken into account include the scope of the partnership, the type of actors, and the size of the partnership.

5.1.1 Scope of the Partnership

The scope of the partnership relates to the specificity of its objectives and the time frame in which those objectives are expected to be achieved. Partnerships that clearly define a very specific objective at the outset, such as developing an integrated pest management strategy for tomato cultivation, may require a fairly simple organizational structure. However, if the partnership's objective is general and long term, such as improving the competitiveness of the tomato agrichain, then it may require a more complex organizational design that allows for the planning of joint activities as well as strategic and operational decisionmaking.

5.1.2 Partners

The organizational design should allow all of the partners—whether they are large or small, powerful or weak, economically affluent or not, politically influential or not—to be represented in the partnership and make decisions regarding its direction and activities. If they are not strongly represented, then small producers should have a spokesperson to defend their interests. Larger-scale businesses, companies, and government and research organizations usually participate directly in the organization of the partnerships. Commonly, the more established

Consideration 21: It is important that decisionmakers in organizations participating in partnerships delegate sufficient power to those who actually represent the organization in the partnership. Otherwise, decisionmaking in the partnership can be paralyzed. The decisionmakers should monitor the partnership's progress, however.

and well-regarded institutions with previous partnership experience assume leadership in organizing the partnership. Individual producers or small producers' associations without previous partnership experience should delegate some decisionmaking power to the partnership itself or cede their rights to another member in which they have confidence.

5.1.3 Size of the Partnership

The size of a partnership has to do with the amount of resources it uses, the number of actors involved, and the scope of its activities. When the partnership includes many resources and people, it may be useful to design a hierarchical structure that allows for efficient work organization and decisionmaking on different levels. For a short-term partnership using few resources, it will be more practical and cheaper to design a structure in which the participants meet directly and make decisions on one level only.

5.2 CHOOSING AN ORGANIZATIONAL DESIGN

Choosing an organizational design also depends on the costs involved. Organizational designs with multiple levels of decisionmaking and delegation are costly in terms of the management burden. However, a totally participatory organization can also become costly due to the time that all the partners will have to commit to lengthy joint decisionmaking processes. When

Consideration 22:
The organizational design of the partnership can vary from formal to informal, depending on the partnership's scope, type of actors, and size.

choosing an organizational design, partners need to consider not only the type of partnership they want to create, but also their managerial preferences:

- **Informal.** In cases where partners already know and trust each other and where no formal encouragement and monitoring is required, simpler organizational designs are preferable. Larger partnerships with ample contractual bases may explore more complex and hierarchical organizational designs.
- **Hierarchical.** Representatives from the partner organizations should be present at all constitutional meetings of the partnership and should participate in the decisionmaking, which in the beginning needs to be based on consensus (a majority vote can be used later if all the partners agree to it). Later, many partnerships decide to establish a hierarchical decisionmaking process that delegates decisionmaking power to certain bodies. Overall leadership can be conveniently located in a central decisionmaking committee that consists of one representative from each partner organization. When a partnership has many partners, an alternative is to delegate the implementation of activities and operating decisions to a managing director, with the decisionmaking committee being involved only in decisions of major importance.
- **Multiple hierarchies.** If the partners choose to establish more than one level of hierarchy, it will be necessary to define the functions of each one, as well as the direction of command (vertical or horizontal).

Figure 7: Decision Tree for Partnership Structure

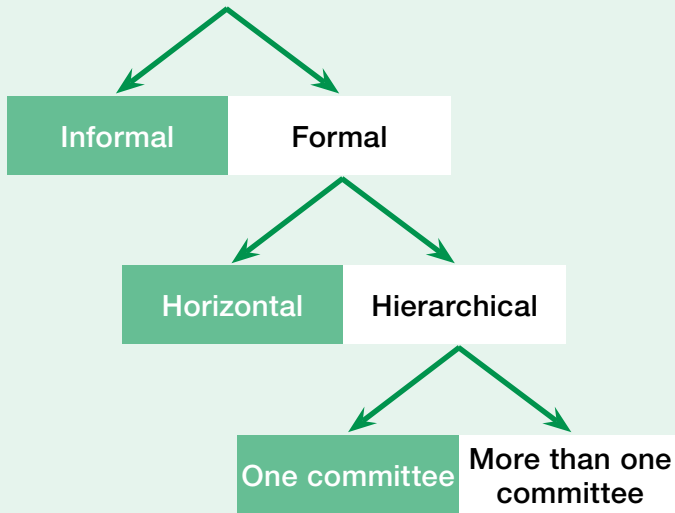
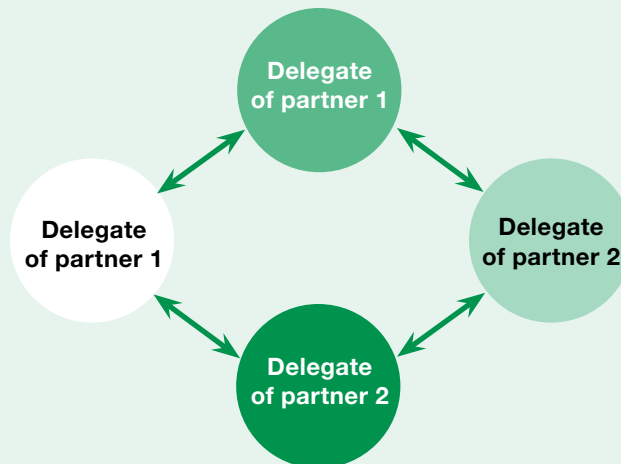


Figure 8: Operational Team



The most common approach is to distinguish between a board of directors and a technical committee. The board of directors is responsible for the representation of the partnership and for making programmatic decisions. The technical committee supervises and/or carries out technical activities and reports to the board.

In sum, the organizational design needs to allow for the clear representation of the partnership to the outside world, facilitate efficient decisionmaking, inspire confidence among partners, and effectively monitor progress.

5.3 EXAMPLES OF ORGANIZATIONAL DESIGN

The decision tree in Figure 5 shows some basic models that can be used for the organizational design of partnerships. They need to be adjusted, however, to the particular needs of respective partnerships.

Operational team model: In this completely informal and non-hierarchical organizational model, researchers and their counterparts work in a single team (see Figure 6). Decisions are made by common agreement and there is no other hierarchical structure. The decisionmakers in each partner organization give their representatives responsibility for making decisions on all partnership matters, although by signing the partnership contract, the decisionmakers have agreed to the partnership's goals and activities. This structure is most appropriate when the partnership has few partners and when the tasks are of high complexity with many interdependent subtasks.

Representative committee model (see Figure 7): This organizational model requires the creation of a committee composed of representatives whose functions are limited to attending annual meetings to monitor progress. Various work teams make decisions regarding all operational matters. An assistant can be hired to help in the administration of the partnership, such as organizing meetings, developing workplans, and circulating information and reports. This model is preferable when there are many actors who are not likely to participate very actively in the work tasks, although all must be represented.

“Managing committee” model (see Figure 8): In this model, the partnership is governed by a managing committee in which each partner is represented. The committee assumes the functions of representing the partnership, making decisions on its strategic orientation and activities, and monitoring progress. This committee may be divided into more specific decisionmaking and operating committees involving researchers and technicians. This type of design is useful when the partnership has a broader scope and many diverse partners.

“Manager” model (see Figure 9): A representative committee delegates the management functions to a specific individual who acts as

Figure 9: Representative Committee

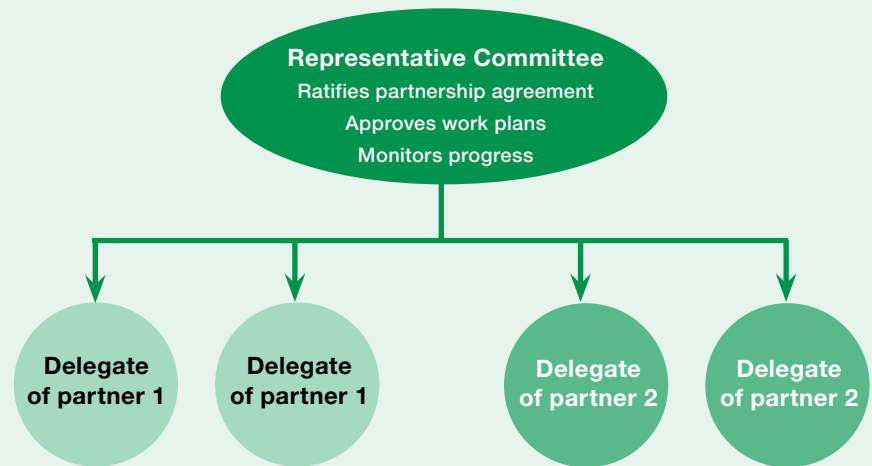
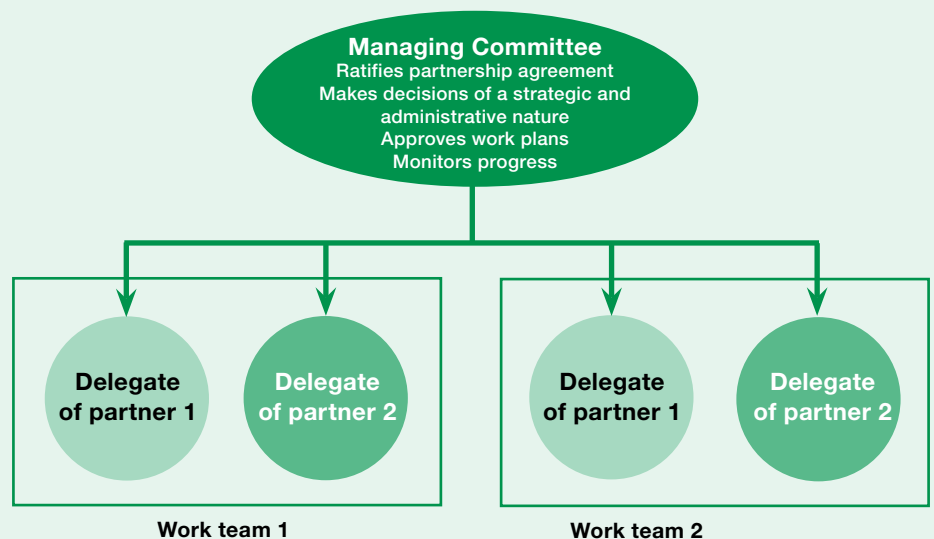
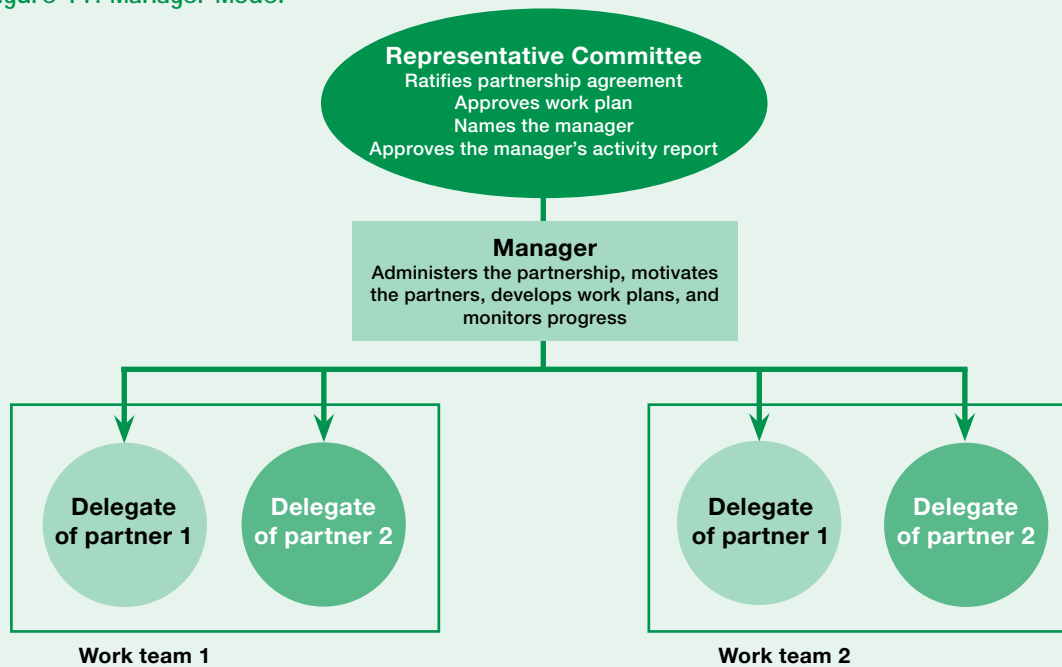


Figure 10: Managing committee model



manager and is accountable for his or her decisions, the conduct of the partnership, and the progress made. This model is especially useful for large partnerships that have significant resources and require the oversight of multiple actors.

Figure 11: Manager Model





FURTHER READING

G. Gijbbers. 2001. *Governance and Institutional Innovation*. ISNAR Discussion Paper 01-09. The Hague: Institutional Service for Agricultural Research. Open source document, available on the www.

This essay reviews literature dealing with governance and institutional innovation in the field of agricultural research and development.

P. S. Myers. 1996. *Knowledge Management and Organizational Design*. Newton, MA: Butterworth-Heinemann.

A compilation of articles that describes how the form and management of an organization shapes its levels of knowledge transfer, innovation, and learning. It focuses on knowledge-intensive companies and the way they collaborate and partner.

S. P. Osborne. 2000. *Public-Private Partnerships: Theory and Practice in International Perspective*. London: Pinter.

The book offers an introduction to partnership theory from an institutional and administrative point of view. It provides information on how public–private partnerships are used in innovation development and many other fields in various countries and regions, such as the United States, Europe, and Southeast Asia. It also includes case studies of administration, organization, and evaluation of public–private partnerships.



Chapter 6: Operating, Evaluating, and Terminating Partnerships

PURPOSE

The purpose of this chapter is to demonstrate how the success of partnerships depends on how they are operated and how effectively the monitoring and evaluation is carried out.

LEARNING OBJECTIVES

- To define the conditions that contribute to the proper functioning of the partnership.
- To stress the usefulness of evaluating partnerships and discuss the available approaches for such evaluations.
- To understand situations in which partnerships should either come to an end, reassess their goals, or continue.

Once the partnership has been formalized via a contractual arrangement, work can begin to attain the proposed objectives. Partners will usually seek to carry out the work plans they have agreed upon. In most cases, partnerships will evolve through the implementation of work routines, and relationships among the partners will improve over time. Through continued work and intensified communication, other problems will emerge, and adjustments will need to be made to work plans, administrative procedures, and, at times, to the overall

objectives to be attained. Partners should bear in mind that there are tools and procedures that help to make these necessary adjustments and improve the functioning of the partnership, some of which are discussed below:

6.1 CONDITIONS FOR THE PROPER FUNCTIONING OF A PARTNERSHIP

Not all aspects of administration and work organization can be regulated through the partnership agreement or contract. In fact, a partnership involves more than a work contract; it also encompasses relationships and communications established on the basis of good will and the commitment of the partners. Some rules of operating partnerships result from a common understanding and are entirely informal, but they are extremely important in contributing to the successful operation of the partnership.

Generally, organizations and companies should not forge a partnership if they simply want to receive individual short-term profits. By entering into a partnership, they should be fully aware that the arrangement is also of benefit to others and requires commitment over a certain period of time. Each partner must work for the success of the partnership as

Consideration 23:

Not everything in a partnership needs to be regulated. Certain aspects should be organized instinctively on the basis of mutual understanding between the partners and their commitment to the common cause.

a whole, which will lead to benefits for the others.

Similarly, the partnership should be a democratic arrangement that never jeopardizes the interest of any of the partners. Nevertheless, it is inevitable that due to their economic power or influence, some partners will exercise more leadership than others. In these cases, it is important to find ways to limit the dominance of such partners.

6.1.1 Building Confidence

The process of building a partnership entails an initial convergence of interests. However, when operations start, difficulties may emerge and differences may become apparent, particularly in those cases where the common interest was not clearly identified and agreed upon. The challenge is to consolidate the initial convergence of interests during the entire course of the partnership. Therefore, it is important to create sufficient opportunities for interaction, communication, and confidence building among the partners, especially at the leadership level. This challenge becomes more important as the number of actors involved in the partnership increases. Learning about the partners' motivations and reasons and initially focusing on common, non-conflictive issues are mechanisms that can contribute to confidence building.

6.1.2 Being Transparent

The partners should have access to clear information on how resources are used and on how activities are progressing. Such transparency provides access to clear information

for all of the partners and consequently, leads to increased confidence. Transparency should also be applied to all obstacles that emerge during the conduct of the partnership and that can jeopardize its success. Efficient monitoring and evaluation (see Section 6.2) can also contribute to increased transparency in partnership activities.

That being said, public-sector and non-profit partners should understand that some private entities may not want information on their partnership-related strategies, processes, and results to be communicated to the public. If this desire does not jeopardize public interests and social benefits, the partners can establish some specific confidentiality agreements.

6.1.3 Valuing Cultural Diversity

No one can deny that at times, there are considerable cultural barriers between the public and private sectors. The private sector is profit oriented, seeks return on investment, and, as is often the case in Latin America, maintains a short-term outlook. It does not usually like to share information with competitors. The public sector, in contrast, focuses on public well-being, long-term social benefits, and promotes open access to public goods and services.

There are also differences in styles. With regard to R&D, the private sector focuses on specific problems of application and expects to obtain results quickly. The public sector

Consideration 24: Partnerships should not necessarily be regulated by contracts. They also can be organized in an intuitive way requiring simply the willingness of the partners to commit to a common goal.

focuses on future-oriented, longer-term activities in science or technology, sometimes without predetermined outcomes or commercial value.

Small-scale producers, businesses, and their associations are not always familiar with business concepts such as the return on investment or consumer preferences. Larger business companies, on the other hand, find it difficult to understand the cultural contexts, time preference rates, and livelihood-maximization logic of small producers.

In partnerships, partners from different sectors carry out their work according to their own cultures, paces, needs, and realities. It would be inappropriate for them to force other partners to adopt a different work culture as long as the one they are operating under does not stand in the way of achieving the set goals. Partners need to be able to accept and value the backgrounds and work cultures of the other partners.

6.1.4 Developing a Strategic Vision

Changes in socioeconomic conditions will lead to changes in how the partnership operates, requiring renewed reflections on the partnerships' objectives and the appropriateness of its activities. The establishment of a strategic mid- to long-term vision helps partnerships to accommodate necessary changes and adapt to them with greater flexibility. Some partnerships can generate this strategic vision at the initial stage (when the common interest is identified), though the vision needs to be updated and deepened throughout the lifecycle of the partnership. In other cases, when conditions change substantially, it will be necessary to begin working around a new vision.

A vision is the manifestation of what the partnership wants to become, and reflects an optimistic view of the partnership's future. The vision needs to be shared by all the partners—something that is usually achieved via analysis of market and technology opportunities, consultations among partners and external experts, and intensive discussion. The development of a vision requires the partners to be able to develop a visionary model that goes beyond individual short-term benefits. The following section lists a number of questions that can be used to develop a vision for a partnership in the field of agricultural innovation:

1. What are main current developments in the sector and/or the agricultural value chain?
2. In what way would the partnership help to improve our situation and competitiveness?
3. In what way(s) would the partnership affect other actors in the market?
4. What would need to happen for our strategic position in the market to improve?
5. What will we have to do (individually and collectively) to ensure a successful partnership?
6. What will we do after our strategic goals have been attained?

Developing or updating a partnership's strategic vision requires special analysis and discussion on the part of the partners. Workshops and meetings, which can be professionally facilitated if required, should be held for this purpose.

6.2 EVALUATING PARTNERSHIPS

In order to determine if a partnership is working well and is on track to achieving its objectives, the partnership's decisionmakers must establish evaluation processes for compiling information about its conduct, progress, and accomplishments. The evaluation of research partnerships can be complicated, however, by a number of obstacles:

- R&D is uncertain by nature and does not always result in concrete products and innovation. Often it is difficult to make judgments based on the results and determine whether progress has in fact been made.
- Determining the impact of a partnership can sometimes be difficult because of the lack of a counterfactual situation. What would have happened if the partnership was not there? Is the benefit a result of the partnership or would it have emerged regardless of the partnership? Many other factors, including markets, technological advancements, socioeconomic and environmental conditions, and the behavior of competitors also determine whether the results generated by the partnership are successful.
- Different types of activities and partnerships require different evaluation measures. For example, the impact of plant breeding is easier to evaluate than of research into farming systems. The results of partnerships developing non-appropriable (private good) technologies are difficult to evaluate, since it is difficult to determine the overall social benefits for all users.

It is therefore necessary to design flexible instruments that allow for the evaluation of a wide range of results.

- R&D budgets are usually tight and often provide insufficient resources for evaluation. Decisions must be made to cover additional costs entailed in carrying out a relevant evaluation.

The evaluation of partnerships can have different purposes:

- To show whether and how efficiently the partnership is generating R&D results.
- To see how the partnership's results have benefited the various partners involved.
- To identify the strengths and weaknesses of the partnership's collaborative process and document its value to the partners, donor institutions, and communities.
- To find out how the partnership can improve its work in areas such as administration, management, or leadership.

There are three basic types of evaluations, and they can be undertaken individually or combined depending on the purpose. In any case, evaluation should be an integral part of the partnership's operation.

1. **Evaluation of results:** This includes measuring the results and their relevance, as well as their relationship to results that could have impact. Positive results indicate that the partnership's R&D was successful.

2. Evaluation of how the partnership

functions: This is basically related to how the partnership is administered, how it organizes joint activities, and how it enables communication, synergy, and joint learning. The fact that the R&D conducted under a partnership generates positive results is not necessarily due to its proper functioning. However, in the medium run, proper functioning of the partnership is a necessary condition to success.

3. Evaluation of the partnership's evolution:

Despite the fact that partnerships are established to accomplish objectives, they evolve with time and must respond to constantly changing contexts, both internal and external. A forward-looking evaluation must therefore measure to what degree the partnership has been able to adapt to new conditions, opportunities, and changes in the partners' interests.

In addition to these three types of evaluation, the partners can also decide to undertake some self-evaluation (see Box 14).

Among the partnerships analyzed by the PPP project, most did evaluate their activities, a task usually entrusted to an administrative or managing committee. These evaluations, however, were limited to the submission of

Consideration 25:
The evaluation of the partnership does not need to be limited to results. It also may focus on the collaborative process and the evolution of the partnership.

Box 14: Self-Evaluation by Partnerships

Partners can organize an internal process of reflection and self-evaluation in order to improve the partnerships' performance. A useful tool for self-evaluation may include four instruments:

- Identifying the indicators that describe the partnership's situation, possibly related to all the three types of evaluation mentioned above, and having the partners discuss how the partnership performs with regard to those indicators.
- Developing a questionnaire that focuses on a number of qualitative and quantitative indicators that describe the partnership's performance. At least one representative of each partnering organization should complete the questionnaire.
- Implementing a procedure to compile information from the discussions and/or the questionnaire. By analyzing the different opinions of the partners on specific items such as satisfaction, performance, communication, and collaboration, an image of the state of the partnership can be generated. When the partners' perceptions of the different items vary, that indicates that some partners are more satisfied than others, which is a situation that needs to be addressed.
- Conducting one or two general meetings with all leaders and staff to reflect on the results from the analysis and to identify ways to improve the functioning of the partnership and establish plans to implement the suggestions.

internal reports, the presentation of results in meetings about the partnership's progress, or field visits. In only a very few cases did partnerships employ more formal evaluative mechanisms. The following section presents the elements of a more formal evaluation process.

6.2.1 Evaluating Results

Evaluating results, both during the process of obtaining them (*ex-inter*) and afterward (*ex post*), requires a systematic compilation of information on the products, effects, and impacts of an investment and the efficiency with which those items are achieved. In particular, the evaluation process must examine:

- the degree to which the objectives have been met
- the partners' level of satisfaction with the results and the partnership's overall responsiveness to the needs and requirements of its members
- the efficiency shown in resource use relative to the results obtained
- the specific R&D results generated by the partnership that can be put into practice
- the probability that these objectives will lead to private and social benefits
- the congruence between the results that respond to private goals and the public interest.

6.2.2 Evaluating How the Partnership Functions

The evaluation of how a partnership functions can be an ongoing process that occurs throughout the partnership's lifespan and contributes to its continued success. It can be an integral part of the organizational design of the partnership, complete with its own priorities, an evaluation framework with a set of indicators, a plan for collecting information, and dates for reporting. This type of evaluation should examine:

- the degree of satisfaction with the way people and organizations work together
- the partnership's ability to identify problems and implement problem-solving measures
- the level of communication and information sharing, including the development of information materials for partners and the public
- the degree of collaboration in the partnership's teams
- the coordination of work tasks

Consideration 26:

The partners should participate in the evaluation of the partnership in order to reflect on its performance and make sure that the recommendations of the evaluation are taken up in order to improve the functioning of the partnership. An evaluation can be set up as an ongoing activity that implemented along with the partnership's activities.

- the degree of satisfaction with the management of funds
- the degree of satisfaction with the process of learning when working with partners
- the management of dominant partners and the overall level of participation in decisionmaking
- the effectiveness of the partnership's leadership.

6.2.3 EVALUATING THE EVOLUTION OF A PARTNERSHIP

Evaluating the evolution of a partnership requires looking at it as a moving target that constantly changes. The main focus should be examining the partnership's ability to react to contextual changes and determining whether the partners' activities are maturing toward greater synergy. In particular, this type of evaluation should examine:

- the efforts made to increase the partners' understanding of each other's positions
- the prospects for the continuation of the partnership
- any new goals or objectives embraced after the partnership was initiated
- any changes that have occurred in the conduct of work, as well as adjustments to newly emerging technological and market opportunities.
- whether the partnership's current funding mechanisms need to be renegotiated, and whether new mechanisms need to be explored

- changes in the partnership's membership
- whether the partnership contract should be renewed and whether the partnership is entering into a new phase
- whether other partnerships on related topics should be created with the same or other members
- whether external support should be sought by the partnership

6.3 CONTINUING OR TERMINATING THE PARTNERSHIP

Partnerships are a means to an end, not an end in itself. Once the objectives have been attained, the partners must decide whether the partnership can continue to reap benefits for all the partners. If it cannot, it is best to end the collaboration or seek other tasks and other partners. It is also possible that the partnership has not achieved its objectives, in which case a review should determine whether the objectives will still be attained and at what cost. If a successful outcome is unlikely, or if the costs are too high, it is better to end the partnership.

If all the members agree to it, then ending a partnership should not be problematic. The situation is different if only

Consideration 27:

Partnerships are not permanent agreements or mechanisms. They may conclude whenever the partners decide to do so. Successful partnerships also may grow and become more strategic, offering returns to partners for several years.

one or a few partners want to pull out, in which case the partners have to come to an agreement that permits the use of the available resources by the remaining partners.

A partnership should be terminated in the following cases:

- The objectives have been attained and there is no prospect of reaching other objectives with the same partners (either because there are no further objectives or because the partners cannot help reach them).
- The costs of continuing the partnership cannot be justified.
- The objectives will most probably not be attained.

- The context has changed and the partnership is not relevant any more because it does not involve the right partners or its objectives are obsolete.

However, it is advisable to continue with a partnership if:

- the initial problem has not been completely resolved or the identified opportunities have not been completely exploited, but the likelihood of a positive outcome is high
- the problem or opportunity that led to the creation of the partnership persists because the context in which the solution can be found has changed
- a new problem or opportunity has been identified and the partnership is well equipped to take it on.



FURTHER READING

J. A. de Bruijn, and H. G. van der Voort. 2004. *Public-Private Partnership in Scientific Research: A Framework for Evaluation*. Zoetermeer, The Netherlands: Consultative Committee of Sector Councils for R&D. Open source document, available on the [www](#).

This essay discusses the complexity of evaluating partnerships and the need to do so from different perspectives. It also analyzes the idea of partnering in scientific research and provides suggestions on how to evaluate these agreements.

UNICEF. 2001. *A UNICEF Guide for Monitoring and Evaluation*. New York: UNICEF Evaluation Office. Open source document, available on the [www](#).

This manual describes the monitoring and evaluation procedures and policies of numerous services, programs, and projects in education and development, and provides best practices and a number of hands-on examples.

Y. Doz, and G. Hamel. 1998. *Partnership Advantage: The Art of Creating Value through Partnering*. Boston: Harvard Business School Press.

This book reviews the current tendency to create partnerships between businesses as a result of changes in technology and in global markets. It offers recommendations for administering partnerships based on strategic principles, organizational design, organizational learning, and collaborative administration.



Chapter 7: A Partnership Example—The Production of Peanuts in the Mairana Valley of Bolivia

PURPOSE

The purpose of this chapter is to review the different stages in the building of partnerships described in Chapters 1 through 5, placing them in the context of a specific example: a partnership among an association of peanut producers, an exporter, and a provider of technical assistance in Bolivia's Mairana Valley.

LEARNING OBJECTIVES

- To illustrate the process of partnership building through a specific example.
- To consolidate lessons learned in the previous chapters about the process of partnership building.

THE CONTEXT

The partnership developed out of a project aiming to improve the productivity and competitiveness of peanut cultivation in Bolivia's Mairana Valley (100 km southwest of Santa Cruz). It was initiated in 2003 with financing for applied technological innovation from the Bolivian Agricultural Technology System (Sistema Boliviano de Tecnología Agropecuaria, SIBTA). The project sought to improve income for peanut producers by 25 percent by introducing new varieties and implementing a set of

broadly defined agronomic practices, such as optimizing planting, treating the soil, fertilizing, controlling weeds, controlling pests, treating diseases, adopting better timing for harvesting, and implementing postharvest treatment. The Association of Oilseed and Wheat Producers (Asociación de Productores de Oleaginosas y Trigo, ANAPO) assumed responsibility for technical assistance and technology transfer, while the Fundación Valles (a regional entity of SIBTA) and the Mairana municipality government provided the financing. Many of the inputs, including seeds, fertilizers, pesticides, and small, semi-mechanized machinery, were given as subsidies to the farmers. A fixed price for the product was set before the harvest and ensured by a buyer, ShiroSawa S.R.L, which markets peanuts to international markets in Japan and elsewhere. The price was based on international price projections, the expected quality of the product, and transport costs. About 250 small agricultural producers participated in the project.

Both ANAPO and the Fundación Valles had previous experience with development projects in the peanut sector, and as a result, had access to a broad spectrum of information about principal actors, production procedures and the commercialization of peanuts. In fact, it was this knowledge of the opportunities and limitations in the peanut sector that motivated them to form the partnership.

7.1 IDENTIFYING AND NEGOTIATING THE COMMON INTEREST

The initial planning of the project was not conducted under the guidance of a formal steering committee, and while all the various partners participated in the development of the proposal, ANAPO and the Fundación Valles took the lead.

ANAPO—a soy producers’ association that provides an advanced technical assistance service for its members and has a full-fledged R&D department—was interested in diversifying to another oilseed crop, developing it into a competitive agrichain, and gaining new members (and their membership fees), and was willing to provide processing, marketing, and technical assistance. Shirosawa—a buyer and exporter of peanuts and sesame with main operations in Paraguay—joined the partnership with the aim of boosting its supply of raw peanuts to meet the requirements of its buyers in Japan. The producers were generally interested in obtaining subsidized farm inputs but also in increasing their yields and income and in being able to sell their peanuts at a fixed price prior to production. Because it was required by SIBTA as a condition of funding, the producers established the Association of Peanut Producers (Asociación de Productores de Maní, APROMA), although the Association did not express any additional interests. The Fundación Valles, which manages SIBTA’s technological innovation funds and which promoted the creation of the partnership, was interested in identifying and funding projects that increase the incomes of small-scale producers. The Mairana Municipality, the project’s co-financer, was interested in investing its funds in productive development projects in its communities in

order to improve the livelihoods of its population. From this set of diverse interests, the common denominator identified in the development of the proposal was to jointly work on “introducing the new peanut variety together with a set of agronomic and post harvest techniques in order to assure a large quantity of production at export quality.”

7.2 FINANCING THE PARTNERSHIP

The mechanisms for assigning financial resources were determined by the conditions of SIBTA’s fund for applied technological innovation. The Fundación Valles, which channeled SIBTA’s funds, contributed 85 percent of the financing for the partnership, while the Mairana Municipality contributed the remaining 15 percent. The origin of both funding sources was the Bolivian government and international donor agencies. Other in-kind contributions, especially labor but also logistical support, were provided by ANAPO and to a limited extent by those farmers who were actively engaged in the farmers’ association.

Figure 10 shows the different contributions of all the partners. It provides evidence of the marginal commitment of the producers and the buyer, Shirosawa. However, in order to assure participation and motivation, nothing more was requested of these actors during the negotiations. ANAPO subsidized the project through its integrative efforts to maintain collaboration among all partners, functions which were unpaid. Due to such in-kind contributions, the total budget of the partnership was greater than the amount provided by the two funding agencies.

7.3 LEGAL IMPLICATIONS

The regulatory framework of the partnership was dictated by SIBTA's funding regulations, which establishes among other things, that the intellectual property of any knowledge or technology developed by a SIBTA project will be public property. However, the technological package of services being developed by the partnership has not evolved enough to merit intellectual protection in form of invention patents, models of utility and industrial design, trademarks, or indications of origin, and it is not likely to do so in the future. No intellectual protection applies to the new peanut variety that the partnership uses, since Argentina's National Institute for Agricultural Technology (Instituto Nacional de Tecnología Agropecuaria, INTA) exempted it as a public good. As a result, no royalties need to be paid to those who use and multiply its seeds.

The partnership became legally formalized when the

project proposal was signed by the partners; it included in its addendum a number of letters of understanding manifesting the commitment of the partners.

7.4 ORGANIZATIONAL DESIGN

The partnership did not develop a particular organizational design. For the most part, ANAPO's operational plan provided the necessary structure for implementation. It was an appropriate solution that took into account the limited size of the partnership and the fact that none of the partners had much ability or desire to formalize the organization of the partnership. At the beginning of the partnership, it was the Fundación Valles that promoted the relationship between ANAPO (which already maintained relationships with the buyer) and the producers. Later, ANAPO assumed leadership of the partnership, organizing joint activities and promoting communication and the dissemination of technology.

Figure 12: Estimated Contributions by Partner

Type of Contribution	Fundación Valles	ANAPO	APROMA	City of Mairana	Shirosawa S.R.L	Total
Human Resources (not financed)	2.3%	6.2%	2.3%	0.9%	2.4%	14.1%
Operating Costs	53.8%	3.4%	0.2%	8.2%	—	65.6%
Physical Resources (not financed)	1.9%	6.9%	0.8%	0.2%	1.8%	11.6%
Development of the Partnership	1.9%	3.8%	1.4%	0.3%	1.3%	8.7%
Total Value	59.9%	20.3%	4.7%	9.6%	5.5%	\$152.439

7.5 OPERATING, EVALUATING, AND TERMINATING THE PARTNERSHIP

Thanks to ANAPO's integrative role, the fluid communication among the partners helped establish adequate levels of confidence and solidarity in the partnership. Strong relationships developed, particularly between ANAPO and the producers and ANAPO and the buyer. The link between the producers' association and the buyer increasingly became closer through meetings in which prices and details of the conditions of payment were discussed. In those meetings, producers learned about the buyer's approach to the initiative as well as his challenges, and discovered that ANAPO was just a facilitator in their direct relationship with the buyer.

Despite these interactions, the level of transparency among the partners still needs some improvement. For example, the producers could be better informed about how prices are established, how the calibration system works, and what market perspectives exist in the future. And the producers and the buyer still don't have a complete understanding of each other's cultures, despite ANAPO's efforts to bring their different world-views together.

To improve the functioning of the partnership, the producers' association and the buyer, Shirosawa, may have to deepen their commitment and assume greater responsibility in assuring that the partnership meets its objectives. For instance, the producers should understand that in order for Shirosawa to export the peanuts, the producers must comply with the minimal quality standards required by the market. And Shirosawa could make greater efforts to understand the realities of production and of the small producers, which are marked

by household and risk considerations and limited access to resources and credit. ANAPO and the Fundación Valles, and to a lesser degree Shirosawa, have been buying into a common strategic vision for the development of the peanut. However, the producers and their association have not yet reached the stage of being able to think on this strategic level.

The partnership did not engage in an explicit self-evaluation. However, Fundación Valles undertook a medium-term evaluation to justify the SIBTA resources that were spent. The evaluation focused mainly on analyzing certain results, such as overall peanut production and the number of farmers involved, and gave marginal attention to issues relating to the process of collaboration and the evolution of the partnership. Thus, efforts to seek better organizational and collaborative solutions fell to ANAPO's individual initiative.

Overall, the partnership can be considered as being successful with regard to the integration of interests, the level of joint learning, and adoption of innovation. The benefits that the producers have received from the partnership include a reduction of production costs by some 30 percent, a 40-percent increase in yields, the strengthening of the farmer organization, and the transfer and introduction of new technology. In addition to achieving the project's goals, other unexpected achievements were realized: new production and commercialization skills were acquired and partners initiated collaboration with other actors in the sector.

On the downside, some producers could not implement all of the suggested agronomic practices, which led to problems of insufficient quality and yield. Apparently, the set of practices was not easily adjusted or adaptable to local conditions. In

addition, prices for the Forman peanut variety have declined on international markets, which has led to lower than expected earnings and even losses—a situation that could jeopardize the continuation of the partnership. If the partnership is to continue, both of these issues will have to be addressed.

Despite the partnership's tangible successes in improving production, yields, and quality of peanuts, there are certain threats to its future. First, the producers are only very slowly attaining higher yields and better quality in their production, and the resulting increase in income is still not sufficient to pay for ANAPO's technical assistance and advisory services, which the farmers may need after the SIBTA funding runs out this year. Shiroshawa, on its part, does not have the ability or the willingness to finance works related to storage, distribution of seeds and other inputs, husking of harvested seeds, agronomic monitoring, and supervision of product quality—functions which ANAPO currently performs with the SIBTA funding. If no other sources of funding are identified, it is unclear how the current broad collaboration among the partners can continue. Most likely the intensity of the technical assistance will

decrease. One possibility is that SIBTA may extend funding for two years in order to involve more producers from other areas.

Another critical issue is the negative trend in world market prices for the Forman peanut variety, a trend that is depressing incomes for farmers. The partners could consider more profitable alternatives, such as using other varieties, applying less cost-intensive cropping methods, and seeking new destination markets and buyers. Such changes would need to be initiated by ANAPO, which is in fact constantly revising opportunities to develop the sector. Nevertheless, it seems that these changes would require new and alternative funding sources, such as a new donor, a levy for all peanut producers, or voluntary private contributions from processors and exporters. These changes, however, would be difficult to make within the framework of SIBTA's funding scheme for applied innovation projects, because it does not permit the project implementation plans to be readjusted once a project has received funding. Therefore, the Fundación Valles may drop out of the partnership. If so, the rich experience the partners gained within the current partnership will help them establish any new partnership in the future.

Appendix 1: Information on the Empirical Basis for the Recommendations Given in this Report

The arguments and recommendations presented in this document are the result of a project entitled “Public-Private Partnerships for Agro-industrial Research in Latin America” (the PPP project), which was conducted between 2001 and 2005 by the International Service for National Agricultural Research (ISNAR), now part of the International Food Policy Research Institute (IFPRI), and was principally financed by the German Federal Ministry for Economic Cooperation and Development (BMZ).

The project’s main goal was to enable public research organizations and their private partners to contribute effectively to agricultural and agro-industrial innovation and development in Latin America, in a manner that promotes the equitable and sustainable socioeconomic development of Latin American countries. The specific idea was that public–private partnerships would not only help public research institutions to leverage new private sources of funding, but would also create mutually beneficial situations, both for public research organizations and for private companies.

The project was conducted at the request of leaders of agricultural research organizations in a large number of countries in Latin America. It emanated from an ISNAR project in the late 1990s that sought to integrate the demands of agro-industry into national agricultural research systems in Latin America. Specialists from

national agricultural research institutes in Latin America, the International Center for Tropical Agriculture (Centro Internacional de Agricultura Tropical, CIAT), ISNAR/IFPRI, and the University of Hohenheim in Germany formed the international team responsible for the implementation of the project. The team was supervised by a group of leaders from private-sector organizations and research institutes in Latin America.

Based on two main lines of its work—one related to research on existing partnerships and the other on action research on the process of building partnerships—the project uncovered evidence of the desire to form and consolidate partnerships and of the measures that can help improve collaboration within a partnership as well as the partnership’s overall performance.

RESEARCH ON SUCCESSES IN EXISTING PARTNERSHIPS

The national teams compiled data on public–private partnerships in the study countries using a common questionnaire. Representatives of the public and private agents involved in the partnerships were interviewed regarding their perceptions of the creation and operation of each partnership. The partnerships were chosen at random from different inventories of public–private partnerships in

agricultural innovation. Only those partnerships that had been in existence for at least three years entered into the selection process. In the end, the database included 125 public–private partnerships involving university research and public research centers in 12 Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Paraguay, Venezuela, and Uruguay.⁹ The following list depicts the type of information that was collected.

Indicators for Categorizing Partnerships

- Duration of the partnership in years
- Area of innovation sought by the partnership: (1) varieties and seeds, (2) primary production, and (3) postharvest
- Types of public and private actors involved in the partnerships, such as research organizations, extension agencies, NGOs, donors, private businesses, farmers' associations, and government institutions
- Nature of the research carried out in the partnership: (1) basic research, (2) strategic research, and (3) adaptive research and development of products.

Indicators Related to the Financing

- Absolute and relative contributions of the partners
- Mechanisms for allocating funds: (1) competitive funds and (2) direct assignment
- Disbursement mechanisms for the funds
- Financial auditing mechanisms
- Transparency in the use of resources.

Indicators Related to the Organizational Design

- Perception of who takes the initiative in the partnership
- Complexity of negotiations among the partners
- Partners' perception of the partnership's leadership
- Partners' perception of conflicts that occur in the course of the partnership.

Indicators Related to Legal Aspects

- Type of legal document formalizing the partnership: (1) verbal agreement, (2) letter of understanding, or (3) specific contract

⁹ F. Hartwich, C. Gonzalez, and L.-F. Vieira. 2005. *Public-Private Partnerships for Agricultural Innovation and Development in Latin America*. ISNAR Division Discussion Paper 1. Washington, DC: International Food Policy Research Institute.

- Existence of a legal guarantee or of conflict-resolution mechanisms
- Character of results generated: (1) private good, (2) public good, or (3) mix of goods
- Entity to which the intellectual property of the results is granted
- Redistribution of benefits from the results (royalties)
- Partner's perception of the difficulties involved in distributing the benefits.

Performance Indicators

- Partners' perception of the pertinence of the goals established by the partnership
- Partners' degree of satisfaction with the partnership's results and achievements
- Public sector's perception of the consistency between the partnership's goals and the general social goals
- Partner's perception of equity in the distribution of benefits
- Degree to which the partnerships improves income for small-scale producers.

The data were analyzed by three teams of researchers. The first considered aspects of the **partnerships' governance and organizational design**, testing the following hypotheses:

1. The organizational design of a partnership needs to reflect the number and types of partners involved and the diversity of their interests.
2. The organization design in a partnership depends on the kind of research it promotes, the type of results it hopes to achieve, and their appropriability.
3. Partnerships with well-defined responsibility for activities generate better results and higher impacts.
4. The public and private sectors have different cultures, viewpoints, and interests, and these manifest themselves with greater intensity when there have not been previous relations between the actors.

The second team analyzed the **financial aspects of partnerships**, testing the following hypotheses:

5. The most frequent mechanism for allocating funds to public–private partnerships is that of competitive grants.

6. The success of a partnership depends on the degree to which donors and partners comply with payments, both in terms of timeliness and amount.

7. The success of a partnership depends on financial monitoring and transparency in the use of funds.

The third team analyzed the **legal aspects of partnerships**, testing the following hypotheses:

8. The appropriate formal arrangement legalizing a partnership depends on the type of actors involved and the kind of research the partnership promotes.

9. Private partners commit to a partnership so they can appropriate the results of the technology for a sufficient period of time.

ACTION-RESEARCH ON MEASURES TO FOSTER PARTNERSHIP BUILDING

In Costa Rica, Ecuador, El Salvador, and the Dominican Republic, the project helped create awareness of the benefits of partnerships among potential partners, and of analyzing technological and market opportunities and planning and formalizing partnerships. It fostered the creation of seven public–private partnerships for agricultural innovation, and was able to study what measures worked best. The cases were chosen based on the demands of government bodies and research organizations in the case study countries. They included:

1. A partnership for innovation in broccoli production and export in Ecuador.
2. A partnership for innovation in mango production and export in Ecuador.
3. A partnership for innovation in banana production in the Dominican Republic.
4. A partnership for innovation in coffee production in the Dominican Republic.
5. A partnership for innovation in loroco production and marketing in El Salvador.
6. A partnership for innovation in organic coffee production in Costa Rica.
7. A partnership for innovation in potato production and processing in Costa Rica.

In these seven cases, the team carried out a series of interventions aimed at establishing partnerships, and then analyzed the effectiveness of these interventions. The interventions included:

1. Motivating all actors in the value chain through an **awareness building workshop**.
2. Supporting the identification of particular value-chain development problems during a **value chain-planning workshop**. Participants here were

only those actors who, during the motivation phase, expressed greater interest in joining a partnership. Various elements of chain-planning were applied, including:

- a. Chain mapping; identification of actors, product flow, and existing bottlenecks; and a SWOT (strengths, weaknesses, opportunities, and threats) analysis in the development of the chain;
 - b. A problem-tree analysis for each of the identified development bottlenecks in the fields of primary production, processing, and commercialization; and
 - c. An analysis of the economic surplus of investments in certain innovations.
3. Forming multidisciplinary teams between IFPRI, public agencies, the private sector, and producers to carry out studies of the market and of technological opportunities, establishing:
- a. Mapping the value chains that included more advanced information on types of actors involved, the movement of products, prices, and profit margins;
 - b. Analyzing the technological and market opportunities in current and future markets, for existing products and products still to be developed; and
 - c. Determining the competitive potential of certain products in the chain and the chain at a whole.
4. Validating the study results with interested parties in a partnership-planning workshop, with the goal of formulating a shared vision for the development of the value chain and identifying the common interest shared by participating actors and potential partners candidates;
5. Based on 3 and 4, designing a partnership and negotiating the contributions of potential partners during a number of roundtable meetings;
6. Developing proposals that stipulate the commitment of the partners, the activities to be carried out, and the redistribution of benefits. The proposals were then used to search for additional sources of funding.¹⁰

¹⁰ F. Hartwich, M.V. Gottret, J. Tola and S. Babu, 2007. Capacity Development in Public-Private Building Public-Private Partnerships for Agricultural Innovation in Latin America Lessons from Capacity Strengthening. IFPRI Discussion Paper 699. Washington, DC: International food Policy Research Institute.

Appendix II: Draft Contract to Establish an Alliance for Developing Innovation through Collaborative Research

This agreement was endorsed in the city of San José, the XX day of XX in the year XXXX, between company XX, henceforth referred to as YYYY, represented by Sr/Sra XXXXXXXX, identification card number _____, resident of [name of town] , in his/her capacity as manager or administrator, with general or full power of attorney, unlimited or limited, for an amount not to exceed XXXX, as supported by the attached documentation, along with:

Cooperative XX, henceforth referred to as YYYY

Partnership XX, henceforth referred to as YYYY

Research center XX, henceforth referred to as YYYY

University XX, henceforth referred to as YYYY

Institute XX, henceforth referred to as YYYY

Whereas:

Costa Rica is substantially expanding its ability to produce high-quality organic coffee by investing in innovative field production technology, processing, and product marketing.

Costa Rica has great opportunities to provide high-quality organic coffee to international markets. Costa Rica has ample capability in its universities and public research centers for developing innovative field production technology, processing and product marketing.

And considering that:

Company (cooperative, partnership, institute) XX, whose mission is X; and university (research center) XX, whose mission is X, as partners, recognize sufficient legal capacity in each other and are convinced of the importance of strengthening organic coffee farming in the country, agree to the following:

1 – Definition of the alliance

1.1: The objective of this contract is to implement a project entitled Alliance for XXX, whose primary purpose will be X

1.2: Specific project objectives are: XXX

1.3: Project activities will include:

Research: XXX

Validation: XXX

Dissemination of results: XXX

2 – Alliance operations

2.1: The project will create an “alliance committee” consisting of X members, each representing one project partner from participating organizations.

2.2: The executive functions of this committee will be to:

- Designate, annually, an executive committee of X members.

- Ratify the technical work plans for project implementation established by the executive committee.
- Establish the account status of the alliance each X of each year.

2.3: The executive committee will undertake all necessary actions aimed at achieving the planned objectives in a timely manner. Specifically, it will:

- Establish the technical work plans to be executed.
- Create technical working groups for implementing those plans.
- Arrange for administration of the funds and disbursement of the payments required for implementing planned activities.
- Develop and submit to the alliance committee, before the X of X of each year, a final report on the work completed in the past year.

3 – Partner agreements

3.1: Research, validation, and dissemination activities implemented by X researchers from university X and X researchers from institute X, and X of X

3.2: Other players in the private and public sectors (including people who contribute to project activities, management, monitoring, and control) should be funded by their affiliate institutions, or at their own expense.

3.3: Private and public entities will also contribute to the project by providing for the use of equipment, production fields, and processing stations. In particular, the following will be used: Production field XXX Laboratory XXX

3.3: Funding project operating costs, estimated at about XXX annually, will be the responsibility of the private-entity partners and will be distributed in the following manner: XXX = X% XXX = X%

3.4: In order to deposit financial contributions, the executive committee will open a bank account from which all outlays will be made.

3.5: Alliance partners agree to elect a person responsible for finding funding to supplement the needs of the alliance, as well as issuing, each XXX year, a statement of assets and liabilities in the management of these funds. 4 – Control and monitoring

4.1: A policy of transparency should be pursued in information management so that all project partners and working group members have access to all alliance documents, through either electronic mail or a website located on a central server, or as otherwise agreed by the parties.

4.2: All technical group activities should be monitored by the executive committee, which is responsible for proactively supporting and ensuring compliance with the project requirements.

4.3: The committee must also ensure that:

- Working groups submit quarterly progress reports to the steering committee.
- At least twice a year, working groups disseminate the knowledge generated about technologies that work to end users.

- All members of the committee review the progress of the project.

5 – Intellectual property and publication of results

5.1: The partners recognize the reciprocal right to publish any scientific discoveries that arise from the activities described in this agreement, provided said publications refer to this agreement as well as the involved technical and/or scientific counterparts.

5.2: Each party can use partial or final results, in whole or in part, for publication as an article, in conferences or congresses, or via any other mode of dissemination, subject to written authorization by the alliance steering committee.

5.3: If project results are patentable or subject to registration as intellectual property, center XXX and university XXX will be responsible for registering them under the name of XXXX, with the researchers who have conducted the work appearing as inventors or authors. Any patented or registered results may be registered in the name of one of the parties, provided the express written consent of the other parties is obtained. Registered or patented results will be subject to the rights and exclusive use of the holder for a maximum of XXX years.

5.4: The project recognizes that this protection allows for the collection of royalties but does not necessitate it. The project is obliged, however, to respect international rules governing public material distributed internationally and the material property rights of the partners.

5.5: Each party agrees to not disseminate, under any circumstance, scientific or technical information belonging to another party to which it may have had access during the

development of the research project as long as the data are not in the public domain.

6 – Term and termination of the alliance

6.1: This agreement shall enter into force as of its adoption and for a duration of X years, from the X of XX of 20XX. Its deadline may be extended by mutual agreement if deemed necessary by the parties for completion of the activities and results proposed in the alliance.

6.2: The agreement may be renewed automatically for equal periods unless any party provides notification of its incontrovertible willingness to terminate it.

6.3: The agreement may be continued with additional partners or without some of the current partners only through the exclusion or inclusion of their signatures on this contract.

6.4: By mutual agreement, the parties may change the conditions of this document at any time. Each party retains the right to waive the present contract, provided the request for waiver is communicated X months before the expected date of termination.

6.5: Failure by any party to honor any of the obligations of this contract will entitle the others to terminate said contract, with all relevant rights on the research subject being automatically cancelled.

6.6 In any dispute concerning the interpretation and application of this contract, jurisdiction is maintained exclusively by the courts of X, explicitly renouncing each side of the dispute to any other jurisdictions that might incur.

As proof of conformity, the parties have signed and ratified X identical copies of this agreement.

Signatories

For Institute X

For University X

For Cooperative X

For Partnership X

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