

Vice Presidency of Sectors and Knowledge  
Research Department

## Private and public strategies for success in modern agri-food markets RG-T3569

### 1. Background and Justification

Historically, the fastest road to development was thought to go through industrialization. Development occurred through a process of structural transformation, mobilizing workers from low productivity sectors (mostly traditional agriculture) into high productivity ones (particularly modern manufacturing). This process of structural transformation resulted in substantial increases in economy-wide productivity.

The manufacturing industry was deemed desirable because it had unique characteristics: high productivity and high productivity growth; the ability to generate ample employment for unskilled labor, abundant in developing countries; and it was exportable and hence not limited by the size of the domestic market. Moreover, unlike traditional agriculture that involved repetitive tasks resulting in expertise rarely applicable elsewhere, modern manufacturing generated “capabilities” that allowed countries to produce increasingly sophisticated goods in a wide variety of industries.

Recent experience, however, shows that, with few exceptions, manufacturing-based structural transformation is a thing of the past. Rodrik (2016) documents that, as countries develop, the share of manufacturing in GDP and employment now peaks at lower levels, and at lower income per capita. This process of “premature deindustrialization” suggests that development strategies based primarily on manufactures no longer seem viable.

Moreover, the characteristics of manufacturing are no longer unique. On the one hand, global value chains and vertical disintegration of production may reduce opportunities for capability acquisition to late industrializers, who tend to specialize in segments requiring repetitive tasks (Sabel, 2017). On the other hand, some of the features historically attributed to manufacturing have become increasingly commonplace in other sectors.

Among those sectors, few have experienced a more dramatic transformation than agriculture. Advanced genetics, precision agriculture, big data, and the use of sensors and the internet of things suggests that, at the frontier, farming has become a technology industry. On the demand side, a large variety of products no longer face the low income elasticity that made the sector unappealing. As people become wealthier and switch away from staple grains and starches towards more diversified diets, products such as fruits and vegetables, meats and feed grains are facing dynamic demands. Specializing in such products, particularly when countries have comparative advantages in them, has become increasingly attractive. Yet successful integration in modern agriculture is far from automatic. Increasingly sophisticated buyers are imposing strict standards and demanding higher-quality products, requiring new capabilities at the firm and the country level.

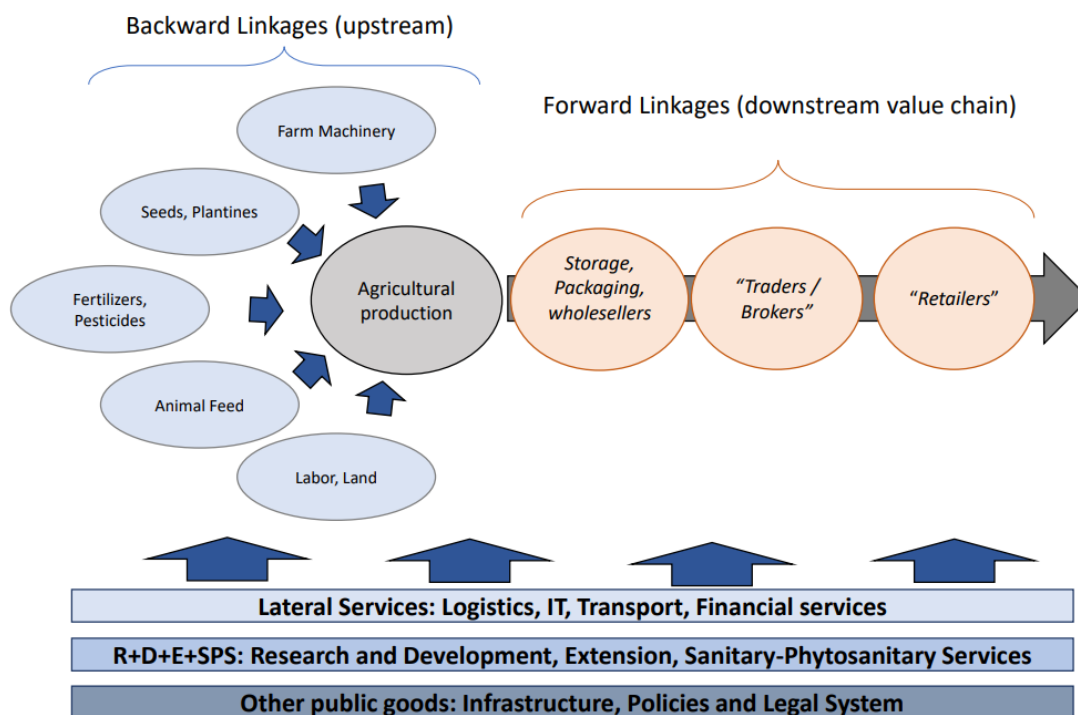
What explains successful integration of Latin American and Caribbean firms into modern agri-food world markets? What type of strategies are required on the part of participating firms? How can governments support their firms in their quest to succeed? These questions will be at the center of this project. In order to answer them, we will be conducting a series of country studies, each one looking at a number of successful cases of modern agri-food exports. The studies will broadly follow a common conceptual framework developed for Chapter 10 of the

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2019 IDB Development in the Americas report by Ardila, Ghezzi, Reardon and Stein (2019).<sup>1</sup> A key concept within this framework is that of “customized competitiveness” (see Zilberman et al., 2019, and Ardila et al., 2019). In order to succeed, firms need to customize their products to the specific demands of target markets and comply with the private standards imposed by modern buyers; in turn, governments must customize the supply of public goods to match the private sector needs. Two case studies previously undertaken for the chapter (exports of fruits and vegetables in Peru and Mexican pork exports to Japan) will help to illustrate the type of analysis required.

The studies will take into account that modern agriculture does not end within the farm; it requires a complex network of backward, forward and lateral linkages (including agrochemicals, genetics, farm machinery, logistics, transportation services, processing services, wholesalers and retailers, etc.), with specialized economic agents and institutions that enable producers to compete in international markets and respond to changing demands (Figure 1). Moreover, successful integration into world markets also requires governments to provide key public goods, including infrastructure (rural roads, ports, energy, irrigation infrastructure, etc.), certification services, research and extension services by public institutions, and sanitary and phytosanitary services and trade negotiations to help open foreign markets for specific products.

**Figure 1. Agri-food Systems\***



Source: Ardila et al. (2019).

<sup>1</sup> See “Modern Agri-food Markets: Fertile Ground for Public-Private Cooperation”, by Ardila et al. (2019), in *Trading Promises for Results: What Global Integration can do for Latin America and the Caribbean*, Moreira and Stein (eds.), 2019. Inter-American Development Bank.

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A discussion of the private sector strategies—both within the farm as well as along the value chain— to customize their products to the specific requirements of the target markets will be at the core of this project. Nonetheless, the role of the bundle of public goods needed to support these private strategies will be given considerable attention as well. To the extent possible, the project will include cases in which small farmers participate actively, and benefit from, the export activities documented in the case studies.

### 2. Objectives

The studies should contribute to our understanding of how Latin American and Caribbean firms can succeed in modern agri-food markets. In particular, the research should aim to:

- a. Understand how countries develop successful non-traditional export activities in the agri-food sector. As we will discuss below, our focus will be not just on food products, but also “beyond food” products such as specialized services, agricultural machinery, etc.
- b. Understand the nature of the challenges that need to be overcome in order to achieve success, and what firms, farmers, and governments can do to overcome them.
- c. Understand the strategies adopted by the firms and farmers in terms of innovation, marketing, logistics, etc., in order to reduce costs, increase productivity, or develop differentiated products that match market demands.
- d. Understand the role of public goods—and public policy more generally—in helping the private sector achieve success.
- e. Generate knowledge that will help the Bank engage in a policy dialogue process with its clients—agriculture ministries, agriculture research and technology institutions, and related organizations—in order to improve the quality of public policies in this area.
- f. Help IDB Invest and IDB Lab identify potential investment opportunities.

### 3. Scope and Methodology

Each of the research papers will consist of a series of case studies on successful agri-food exports, which will constitute the core of the project. While we expect that most proposals will contain cases related to a single country, we will also consider proposals looking at the same sector (or related sectors) across countries. Each research paper will generally be expected to contain three or four cases each, but we encourage research teams to propose five cases if possible, and then the final case selection for the winning proposals will be made by those teams in coordination with the leaders of the project. As an exception, only in the case of small countries where relatively few successful cases exist, we will also consider proposals with a minimum of two cases (for which funding will be adjusted accordingly), or proposals that include cases involving different sectors in different countries (such as

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countries in the Caribbean).<sup>2</sup> The cases can relate not only to agriculture per se, but also to aquaculture, cattle raising, poultry, dairy products, agricultural inputs producers, agricultural services providers or other food-related sectors. Cases could also include non-food sectors like forestry. In the rest of this document and in the project we will loosely refer to all of these sectors as agri-food exports.

We will start by discussing relevant criteria for the selection of cases. Then we will discuss the type of questions and issues to be covered in each of the case studies. Finally, we will discuss several other methodological issues.

### a. Selection criteria for case studies

The export success stories should focus on firms in Latin America and Caribbean, and their selection should consider the following criteria:

- 1) **Impact:** We want studies to focus on products or services that “move the needle,” whether because the value of exports is high, they employ a large number of workers, they have large supply chains, or add significant value added to existing sectors.<sup>3</sup> If there are sectors or products that are still in a development phase but are perceived to have significant potential in terms of exports or employment, those would very much be within the scope of the project as well. We want the sectors to reflect genuine comparative advantage. We are not interested in sectors (like sugar in some countries) that can compete purely on the basis of subsidies and protection. Cases of successful reconversion of heavily subsidized crops to new successful activities would be of interest.
- 2) **Innovation and capabilities:** We will be more interested in cases in which firms need to develop significant innovations or deploy sophisticated capabilities to achieve competitiveness. An example is the dense farming technologies deployed by Marinazul (a subsidiary of Camposol) in Peru, which allowed them to become competitive in shrimp aquaculture, and require sophisticated monitoring capabilities to overcome the increased potential for transmission of diseases related to dense farming.<sup>4</sup> Another example would be capabilities that allow product traceability, in response to target market requirements. These innovations or capabilities could be necessary within the “farm” or in other parts of the value chain. For example, fresh products tend to be more highly valued in target markets but require more sophisticated logistical capabilities and food safety standards than canned or frozen products, given the need to reach target markets with sufficient shelf life.<sup>5</sup>

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<sup>2</sup> In some cases, this may benefit from assembling teams of researchers from different countries.

<sup>3</sup> Cases that include elements that contribute to improve climate change resilience or mitigation (such as seed varieties that are more resilient to climate change) or reduce environmental damage (such as firms that obtain green certifications in order to open export markets or take advantage of the biomass generated in their production process to produce the energy they consume) would also be of interest.

<sup>4</sup> Dense shrimp farming also requires increased oxygenation needs and more frequent feeding.

<sup>5</sup> For example, in the case of Mexican pork exports to Japan, fresh pork is highly valued in the target market. But selling fresh involves several challenges. Logistically, it requires an efficient, well-oiled transportation system to reach the market with 30 days of remaining shelf life, which is what Japan demands. For Keken, the main exporter, that involved developing new shipping routes through the port of Manzanillo (in the Pacific), which is faster, rather than Progreso in Yucatán through the Panama Canal, which is cheaper. On the production side, it required new industrial vacuum packaging machinery and

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- 3) **Novelty:** We are less interested in products in which the country has had a long-lasting exporting tradition. However, even traditionally exported products may be of interest if there are new varieties developed to target specific market demands, or new production methods that substantially increase the country's quality, productivity and/or export volume. This includes already-exported products in which substantial innovation efforts and investments are required to comply with changing standards in target markets<sup>6</sup> or "escape" competition from new suppliers.
- 4) **Role of public sector and producers associations:** Since one of the objectives relates to public policies, we prefer cases in which there has been some public role, whether via provision of public goods (sanitary services, R&D by a public research institution, infrastructure such as irrigation, market access through trade agreements, extension services), changes in land use or labor regulations, access to finance required to transform production processes, etc. Alternatively, if there was a role of institutions such as multilaterals or development agencies like USAID, this could be of interest as well. Also of potential interest is the role of a producer's association or groups of firms providing sectoral public (or club) goods, as in the case of the Local Plant Health Boards set up by the avocado producers in Michoacán or the flower producers association (Asocolflores) in Colombia (see case studies in Sabel et al., 2012).
- 5) **Impact on small producers:** We strongly encourage at least one case in each country study in which small producers benefit from the export success case. The inclusion of this type of cases will be an important consideration for the selection of the proposals. Examples are Sol Simple in Nicaragua, which sells organic sun-dried fruits to buyers such as Whole Foods; Wiracocha in Peru, which sells organic quinoa worldwide; or Alquimia, in Paraguay, one of the world's largest exporters of chia seeds (among other products). In all three cases, these companies export goods produced by hundreds of small farmers, providing the technology, monitoring quality, and connecting these producers to sophisticated international buyers. We will discuss special issues related to cases with direct impact on small producers below.
- 6) **"Beyond food" products:** While we expect that the majority of the cases covered in the project will involve food products, country teams are encouraged to include at least one "beyond food" product or service, that is, products or services that are not themselves food, but are closely linked to the agri-food sector, and are exported successfully. In most cases, these products and services were developed as byproducts of important agricultural activity. To use Hausmann's "Monkeys and Trees" analogy, they are nearby activities to which monkeys jumped, presumably taking advantage of some pre-existing capabilities. Examples include satellite-based data services and farm machinery for precision agriculture, exports of improved seed

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much stricter sanitary standards at the slaughterhouse for the product to reach the market with bromatological content within acceptable limits.

<sup>6</sup> For example, the European Union has recently imposed stricter standards with respect to the maximum permissible levels of cadmium content in cocoa and chocolate products. Innovations and investments by a firm or group of firms to develop products with reduced cadmium levels would qualify within this criterion as an innovation.

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varieties, cattle traceability software (in Uruguay), or silo-bags (in Argentina).<sup>7</sup> Alternatively, research teams may want to include the discussion of beyond food components in some of the food-related cases proposed.

### b. Contents of the case studies

Each of the case studies should consist of a detailed narrative of the successful experience, including:

1. A data-driven discussion of the economic impact of the successful export case, drawing on all relevant and available data, such as:<sup>8</sup>
  - i. The evolution of exports over time (to each target market if relevant), as well as the evolution of unit export values, if available, to capture quality.
  - ii. The evolution of employment in the company (if the case focuses on a single firm) or sector, including an analysis of wages paid in comparison to those in other sectors to get a sense of the quality of the jobs created, etc. If data are available, we would like to know the impact in terms of jobs created, whether through direct employment of workers, indirect job creation in other segments of the value chain, or involvement of small producers and gender balance of workers in the company or sector and its value chain.
  - iii. The evolution of productivity in the sector (country or region-wide or at least based on company data, comparisons with productivity in other countries at the frontier, if available). The right measure of productivity will depend on what is relevant for each case.
2. A discussion of the key transformations (with regards to demand, changes in technology, or changes in public policies) that made this success case possible. And, more generally, what are the sources of the country's comparative advantage in this product, and how have they been shaped by the transformations identified. Appendix 1, taken from Ardila et al. (2019), discusses some of the potentially

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<sup>7</sup> The example of King Agro in Argentina is very relevant. Originally named King Nautica, this company produced competition sailboats, including carbon fiber masts, mostly exporting to Europe. After the 2008-9 financial crisis, when demand for pleasure boats collapsed, the firm was approached by a farm equipment company that asked them to develop aluminum booms, previously made of steel, for their farm spraying equipment. Sprayers need to be as light as possible (in order to preserve the fields) and cover as much area as possible in each application. Thus, booms need to be long, as well as light and strong. The company instead proposed making booms out of carbon fiber, and thus King Agro was born. While carbon fiber is more expensive than steel, it is five times lighter, and more resistant. It was therefore possible to produce 50-meter booms, compared to the 35-meter steel booms prevailing at the time. This significantly improved productivity, since it allowed farmers to save on diesel, as well as significantly reduce the footprint in the fields, preserving the crops. The firm, which was producing a product that was new for the world and in high demand, was able to rapidly increase its scale of production and its exports. By 2018, it employed 300 workers. In March of that year, King Agro was acquired by John Deere, which controls about 50 percent of the world market for sprayers, for 50 million dollars.

<sup>8</sup> The list of relevant data is not exhaustive, and researchers should expand it to include other available data deemed relevant for their cases.



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- relevant transformations, and discusses the growth of world demand for different categories of food products in the last few decades. In this item, we are thinking about exogenous transformations external to the firms. Firm responses to these transformations should be covered in item 3 below.
3. A discussion of the main buyers/processors/distributors in the target markets: who are they? How did the relationship between them and the exporter begin? Who researched and contacted whom? What are the key requirements for exporters in this particular case (for example, delivery in certain off-season windows, or year-round delivery, certain quality standards, organic or other certifications, shelf life requirements, etc.).<sup>9</sup> Have these requirements evolved over time?
  4. A discussion of the private sector strategies firms used in order to compete in the target markets, including the choice of target markets and the way they **customize** the features of their products to satisfy the requirements (in terms of safety, variety, timing, certification, compliance with environmental and labor standards, etc.) of the target markets identified above. Complying with these target market demands specific strategies, innovation, and investments in the firm's capabilities, and we want to know what these were.<sup>10</sup> As discussed above, these investments and innovations might not be undertaken only at the farm or exporter level, but also in different segments of the value chain. Firms' responses to the transformations highlighted in item 2 should also be covered here.
  5. A detailed discussion of the public goods that were required for the private strategies to have a chance to succeed, and the way the government deployed these public goods (like irrigation infrastructure and good phytosanitary services in the case of fruits and vegetables in Peru). Authors should discuss whether public goods came first (as a supply-driven phenomenon) and then opened opportunities for the private sector, as in the case of large-scale irrigation projects in the northern Peruvian coast, or whether the public goods appeared as a result of a demand-driven process, as in the case the demand for upgraded sanitary services for the production of avocados in Colombia. Proposals should also discuss the mechanisms through which the public sector identified the public goods that were required, such as public-private collaboration schemes like the *mesas ejecutivas peruanas* or the *mesas sectoriales argentinas* (see Ghezzi, 2019, and Obaya and Stein, 2020), and the coordination problems (if relevant) the sector had to overcome (for example, regarding the need for simultaneous lumpy investments by different actors). Researchers should discuss the role played by these public goods in explaining success.<sup>11</sup> To the extent that these public goods benefit small

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<sup>9</sup> Examples are the requirement to export blueberries to the United States during the September-November offseason, or the exports of Mexican ready-to-cook pork belly skewers cut to very precise specifications for the Japanese market (which is one of the highly valued products that restaurants demand).

<sup>10</sup> For example, the high price window for blueberries in the US leads to firms like Camposol and others in Peru customizing their harvest dates to optimize returns.

<sup>11</sup> It would be interesting to learn whether public goods came first (as a supply-driven phenomenon) and then opened opportunities for the private sector, as in the case of large-scale irrigation projects in the northern Peruvian coast, or whether the public goods appeared as a result of a demand-driven process, as in the case the demand for upgraded sanitary services for the production of avocados in Colombia.

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- farmers (even if these are not the main focus of the case study), we want to learn about this as well.
6. To the extent that foreign direct investment has played a key role in the success case, we want to learn about its role. This FDI could take several modalities. One is a distribution firm in the target market acquiring or establishing a joint venture with a key producer in the country under study, like Limoneira, a California-based citrus company, which established a joint venture with Argentine lemon producer Trapani, taking advantage of the opening of the United States market to Argentine lemons. A further example is Mission, a U.S. avocado distributor that invested in a state-of-the-art packing plant in Peru in association with Arato, a local producer. Another modality is a producer in one of the countries under study, like Camposol (Peru) investing in avocado facilities in Colombia and tangerine production in Uruguay, or Hortifrut (Chile) buying a large share of Talsa Berries from Peru in order to enlarge the window in which the product can be supplied to buyers. Researchers should discuss the role of knowledge transfers, access to the distribution network, and other factors in explaining success.
  7. A discussion of the remaining challenges and opportunities to maximizing the development impact associated with the case. What is required, both on the private and public sides, to make the most of this export opportunity? This could include the need to supply new or better public goods, the need to develop new capabilities in the public or private sector (including those not only within the farm but also all along the value chain and throughout the broader network), etc. Researchers should also discuss potential threats to continued success, such as the rise of new suppliers in other countries (such as the rise of Peruvian blueberry suppliers that closed opportunities for Argentinian blueberry producers), more restrictive environmental or food security standards in target markets that may be difficult for firms to comply with, or product substitutes that challenge the future growth of demand for a product (such as meatless beef substitutes). They could also discuss the threat to the sector posed by climate change or environmental degradation, if relevant, as well as that of policy reversals that may undermine existing opportunities.
  8. If relevant implications are not fully explored in item 7, case studies should conclude with a section on policy recommendations.
  9. Although not a requirement for every case, whenever possible, teams are encouraged to construct **counterfactual cases**, that is, cases that are similar to the successful one in many regards, but different in others, which may help point to some of the factors that explain success. For example, in Peru, Ghezzi argues that the phytosanitary service SENASA played an important role in explaining the fruit and vegetable export boom. Quality sanitary services were key in order for Peru to be able to open numerous destination markets. In an early draft of his case study, he uses the case of aquaculture as a counterfactual. This is a sector that did not succeed at first, according to the author, partly due to the lack of appropriate sanitary services for aquaculture products. With the creation of SANIPES, as a result of the demands of the private sector expressed within the mesa ejecutiva of



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aquiculture, this constraint was removed, and the sector (in this instance, shrimp) achieved quick success. Counterfactual cases could also be used across countries.<sup>12</sup>

### c. Special considerations for cases involving small farmers

The insertion of small agricultural producers into international value chains should be of particular interest for development purposes. It can contribute to shift these producers from subsistence agriculture to modern agricultural practices, improving their productivity and their income, and in the process contribute to the economy's structural transformation.

Experience shows, however, that this process takes place very slowly (if at all) when small producers are left alone. To be able to sell in international markets, small producers need to reach certain standards required by buyers. In the terminology introduced by Sabel and Ghezzi (2020) they need to clear a "quality hurdle." This requires investment in machinery, capabilities, certifications, crop reconversion, etc. This is costly (particularly for single producers) and risky given the uncertain payoffs. Furthermore, private credit is scarce. Hence the optimal ex ante strategy to single small producers may be not even trying and remaining in traditional/subsistence agriculture.

There is, of course, a potential complementarity between these small producers and medium and large buyers (such as owners of packing plants, who often are owners of farms themselves). Medium and large buyers have the processing and packing plant (that ideally would need to be filled year-long), the technology and the financial resources, and access to external clients. The small producers have land and willing labor.

In these cases, in principle, the small producers and the exporters can gain from establishing a commercial relationship. The exporter/packing plant owner may provide financial resources and technical assistance to help upgrade small farmers' capabilities and help them clear the quality hurdle (for example, by helping them adopt modern technologies, obtain certifications, etc.) while benefiting from the scale the small farmers help provide for their packing plants, and from selling their packing/shipping services.<sup>13</sup>

However, these mutually beneficial arrangements do not always work, for a variety of reasons. One of them involves imperfect contract enforcement. If the small farmer cannot credibly commit to sell his production to the large buyer providing technical assistance, and ex post sells instead to the highest bidder, cooperation between these actors breaks down. If the large buyer cannot fully trust that the small producers will in fact clear the quality hurdle, they will not enter into these relationships either. The largest producers may resort to exporting only their own production, rather than risk the reputational costs of selling lower-quality production, and small farmers may miss out on the opportunities associated with upgraded production and exports.<sup>14</sup>

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<sup>12</sup> For an example of the effective use of a counterfactual case using another country, see the discussion of flowers in Ecuador as a counterfactual for flowers in Colombia in Arbeláez et al. (2012).

<sup>13</sup> For references about relationships between anchor firms and farmers in the value chain, see Sexton (2012), Swinnen (2014) and Swinnen et al. (2015), among others.

<sup>14</sup> In some cases, these arrangements do not work due to legal constraints (for example, restricting contract farming).

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Yet there are many cases in which these relationships do work. Experience shows that relationship between the small producers and the (medium or large) buyers/exporters can take different forms. In some cases, the buyers will deal directly with the small farmers and aim at establishing close long-term relationships and providing technical assistance and financing and monitoring the production process to ensure quality. In other cases, the buyer may agree on a number of conditions in advance (price, quality, etc.) for transactions to take place without necessarily providing close monitoring or intensive technical assistance. There may also be cases where the relationship between the buyer and the small producers takes place through a middleman that collects the produce from the small landowners and sells it to the packing plant owners. There are also situations where large producers/packing owners concerned with the risks associated with small producers instead decide to rent out their land and hire small farmers as workers while maintaining control over all aspects of the production process.

Small producers, in turn, may benefit from establishing cooperatives or other forms of association. This may allow them to take advantage of economies of scale as, for example, some of the costs of clearing the “quality hurdle” may be fixed and hence the cost per producer falls if shared by a group of small producers. Cooperation among small producers offers other benefits as well. It can increase producers’ bargaining power in regard to prices of both inputs and produce, and it can accelerate technological transfer, as producers can share their acquired knowledge. The formation of producers’ organizations may additionally facilitate access to finance.

The smallest of these cooperatives and associations normally sell their produce to middlemen (*acopiadores*), to large firms or even to larger cooperatives. As these groups grow, however, they can pay for packing services or even vertically integrate and own their own packing plants.

In general, when left to market forces, in relationships between small farmers and large buyers there is underprovision of extension and monitoring services. This is partly explained by the inability to fully appropriate the benefits of providing those services, as explained above. More generally, the speed of integration tends to be slower than desirable. For example, in the Jequetepeque Valley of Peru there are 42k has. of small producers’ land available for agricultural use. The large majority are dedicated to traditional rice production, which is very inefficient, very water-intensive and not particularly profitable. Despite the obvious advantages of modern asparagus, and 25 years since the beginning of the boom in this crop, only 2k has. have been converted to this use. There is clearly a role for public policy to facilitate and accelerate small producers’ transitions to modern agriculture and dynamic value chains. This role can take the form of R+D, extension services (including demonstration plots), financing, incentives for forming cooperatives and associations and help with business plans, among other possibilities.

In addition to the considerations discussed more generally for all case studies in the project, all case studies involving the connection of small farmers to international markets should discuss in detail the issues raised in this section. For example,

- Is there a large anchor firm (buyer/processor/exporter/packer/exporter) involved? What is the precise relationship between the small farmers and the anchor? How did this relationship begin, and how has it evolved over time? Is there a middleman involved?

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- Does the buyer provide financing? Seeds and other inputs? Technical assistance? What kind of investments do small farmers have to make in order to clear the quality hurdle? Are there certifications involved? Of what type? Are there traceability mechanisms? How do they work?
- What monitoring mechanisms, if any, are in place to ensure that small farmers effectively comply with the quality/environmental and other standards? To what extent have new technologies (such as blockchain, IOT, data processing technologies) facilitated interaction and monitoring between the anchor and the small firms in its supply chain?
- What is the potential for further scalability in terms of the number of small producers that participate? What are, if any, the main constraints to scalability? Lack of small farmers willing and able to adopt technologies? Lack of human or financial resources to provide technical assistance? Lack of financing on the part of the anchor? Is there a strategy to relax these constraints going forward?
- How is the price paid by the buyer determined? Are there quality premiums? Are there any mechanisms in place to ensure that farmers obtain a fair price or share of sales along the value chain? Is the government involved in this process?
- How does participation in these networks impact the production, productivity and income of small farmers?
- Did small farmers form associations or cooperatives? If so, how did this happen? What are the benefits of membership in groups? How do associations and cooperatives secure cooperation among members? How do they relate to buyers?
- As in other cases, we encourage researchers to make use of unsuccessful counterfactual cases here as well. For example, we could learn important lessons from failed efforts to engage small farmers in export activities for reasons such as inability to commit to sell the product to the exporter providing technical assistance (and selling to the highest bidder instead), the inability of the exporter to obtain the necessary resources to provide technical assistance, inputs or financing to small farmers, or the inability of small farmers to clear the quality hurdle.

### d. Other methodological issues

The **scope** of the case studies can be broader or more specific. For example, they can focus on an individual product (blueberries) or a class of products (fresh fruits and vegetables); they can focus on an individual exporter, or an exporting industry or sector; they can focus on a specific destination or even a specific buyer, or on exports more generally. This varying scope is illustrated by the two case studies that were included in the DIA chapter: a broader case study considers Peru's fruit and vegetable export boom, while a narrower one examines Mexican exports of pork to Japan. In the limit, a case study could involve exports of a single firm to a specific buyer, such as exports of dried fruit by Nicaraguan firm Sol Simple to Whole Foods.

Regardless of the scope chosen, it is very important that the studies highlight examples of specific companies carrying out specific innovations or investments in capabilities. For

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example, if researchers choose to cover the case of blueberries in Peru as a sector, it will be essential to discuss the cases of Camposol, Talsa, Danper and other pioneers and key players, and show us exactly what they did that allowed success.

While research teams will be expected to gather quantitative data and review the existing literature/sector/company information related to the sectors or products selected, the key to the success of the case studies will be the interviews with the main actors and stakeholders, both from the public and private sector, that played a role in the success case.<sup>15</sup> Identification of and access to these key actors will be a fundamental criterion for the selection of the country papers (and for the selection of the cases therein).

Thus, for each one of their proposed case studies, country teams should specify

- i) The sources of information (data, company information, relevant secondary literature) that will be used to develop the case;
- ii) A discussion of the structure of the sector, including the main companies and market shares, the type of ownership, etc., as well as the main regulations and government programs that target the sector.
- iii) A preliminary list of field visits and of relevant actors to be interviewed, indicating which ones have been already interviewed for the proposal, which have agreed to be interviewed later, etc., and a preliminary draft of the type of questions they plan to ask of different types of actors. In case studies involving small producers, conducting interviews with multiple small producers (and not just the “anchor” company if one exists) is a requirement.
- iv) The key questions/hypothesis research teams will try to answer/test, and the approach they will use to do so.

### e. Content of the research papers

Since we are planning to publish a book that will be a collection of selected case studies (and not a collection of the research papers themselves), the case studies should be self-contained. For the purposes of the research papers (some of which will be published in our working paper series), these case studies, which are the core of the analysis, should be preceded by a brief introduction/overview including a discussion of the country’s agri-food exports (in case the focus is in a single country), their evolution, their economic importance and some of the products that achieved success, as well as a discussion of the role of government (if any) in promoting these exports; and they should be followed by a conclusion summarizing the main findings and discussing some of the general policy lessons that can be extracted from the cases. Similarly, if the papers are on the same sector in different countries, appropriate background on each country’s policies regarding the sector, and country-specific policy implications, should be provided.

## 4. Content of the Research Proposals

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<sup>15</sup> Within the private sector, the list of actors should include producers and exporters, but also when relevant other key actors that are important within the value chain.

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To participate in the project, researchers or research teams must submit a proposal detailing:

- A discussion of each one of the (four or five) cases they propose to study. This should include a justification of the relevance of the country (or sector), as well as each of the proposed cases, for the overall project.
- Methodology to be used in the case studies to address the issues discussed in this call for proposals, including the data and information sources to be used in each case, the list of proposed field visits, the list of already held interviews, and proposed interviews and preliminary questions to be asked to different types of actors, as well as a discussion of the level of access they expect to have to these actors.<sup>16</sup> In case counterfactual cases are proposed for some of the successful cases, the proposal should discuss them and how they will be used to derive insights that will be applied to learn about the successful cases.
- Potential relevance of the lessons and conclusions to be extracted for the public policy debate in the country.

In addition, proposals must include:

- A list of the researchers that will be involved in the project, and a justification of the capacity of the researcher or research team to meet the objectives of the project, including relevance of prior experience. Curricula vitae of the researchers may appear in a separate annex. Subsequent substitutions for researchers originally specified in the proposal may be made with prior approval from the IDB Network coordinator, but the Technical Director should lead the entire project until its full completion.
- A budget (in a separate annex) indicating the time and resources that will be used within the context of the research work plan must be included. The budget should distinguish among amounts assigned to professional honoraria, data collection, “overhead” and other major categories of research expenditures.
- An indicative proposal for the diffusion strategy of the final version of the paper and its potential policy implications.

**Note: Proposals may be submitted in Spanish or in English.**

### 5. Selection Criteria

While most proposals are expected to cover only one country, in special cases proposals covering cases in multiple countries (for example, small economies in the Caribbean) or proposals covering the same sector across countries will be eligible as well. The research teams will be selected according to three main factors:

- i) **Relevance.** The researcher or research teams must state in detail the relevance of the cases chosen to the project’s objectives stated above.

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<sup>16</sup> Access to the key actors is absolutely essential in this project. Researchers should discuss this issue in detail, keeping in mind that companies may be reluctant to share data, and that there may be confidentiality issues involved.

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- ii) **Data and Methodology.** Data collection issues should be described in detail (data sources to be used, planned interviews, the chances of success in obtaining such data/interviews, channels to be used to obtain data, etc.).
- iii) **Experience.** The relevance of the researcher or team's experience to the proposed project will be a very important criterion in the selection process.

### 6. Proposal Registration

Proposals should be submitted using the [Web Submission Form](#). Please note that there are two options within the submission form: one for institutions and another for individual researchers. In the case of research teams, the team leader should register as an individual and must attach the CVs of all team members.

### 7. Coordination and Schedule

The project will be administered by the Research Department (IDB/RES), under the technical coordination of Ernesto Stein (IDB/RES), with the participation of Lina Salazar (CSD/RND) and Romina Ordóñez (DSP/DVF) and external advisor Piero Ghezzi (HacerPeru)

The tentative schedule of activities is as follows:

- **April 6, 2020:** Due date for **receiving proposals**. Researchers should make sure that the complete documentation is submitted to the evaluation committee. Complete documentation should include the following: registration form with all the information requested; the research proposal, budget, and curriculum vitae (CVs up to three pages long).
- **April (TBD), 2020:** Announcement of **selected research proposals**.
- **April (TBD), 2020:** Conference calls with selected country teams to provide feedback on their proposals in order to adjust them.
- **TBD: First Discussion Seminar** in Washington, D.C. (or place TBC), with the Technical Directors of the projects and the Coordinating Committee for the purposes of presenting the methodology to be used in the study as well as brief preliminary discussions of two case studies (and corresponding counterfactuals if applicable) by each of the country teams.
- **September 14, 2020:** Due date for receiving a **first draft** of the country papers, including at least two of the case studies of successful agri-food exports.
- **October 1-2, 2020: Second Discussion Seminar** in Montevideo, Uruguay, (dates and place TBD) with the Technical Directors of the projects and the coordinating committee to present and discuss the first draft of the country papers.
- **October 5-6, 2020: China Summit with Chinese Academy of Social Sciences in Montevideo, Uruguay, 2020** (dates and place TBC): We will present some selected country cases as part of the summit with participation of outside experts and policymakers. **Will be key opportunity to receive feedback for the project.**
- **December 28, 2020:** Deadline for a **final version** of the research papers, including **a summary that discusses policy lessons**. Data should be submitted by this date.



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Deadline for presenting a list of the most relevant dissemination activities (e.g., events, seminars, workshops, etc.) to discuss the main policy lessons of the country study with local authorities, including the corresponding budget. Research papers must follow the **IDB Manual of Style** for working papers.

Studies that are of sufficiently high quality will be considered for publication as working papers.

A selection of the best cases may be included in an edited volume on strategies for success in modern agriculture.

### 8. Financial Contribution and Payment Schedule

The IDB will contribute up to **US\$30,000** as a contribution to the total budget of each study (accepted proposals covering two case studies will receive proportionally less funding). The payment schedule is as follows:

- **20 percent** within 15 days of signing the formal agreement between the IDB and the respective research center.
- **10 percent** within 15 days of presenting and approving the PowerPoint presentation corresponding to the first seminar.
- **30 percent** within 15 days of presenting and approving the preliminary draft of the research paper.
- **20 percent** within 15 days of presenting and approving the second draft of the research paper and upon delivery of the datasets utilized by the study to the IDB.
- **20 percent** upon approval by the Bank of the final research paper.

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## Appendix 1 (taken from Ardila et al., 2019)

### Target Markets and their Transformation

In this era of rapidly transforming agricultural markets, being cost-competitive is no longer sufficient. Exporters must be able to customize their product in terms of quality, safety, timing, traits, and compliance with public and private standards, to the specific demands of target markets. This section discusses 10 key transformations that are relevant for Latin American strategies for customized competitiveness, as well as their implications for different product markets.<sup>17</sup>

First, urban food markets in developing countries are growing fast—six-fold over three decades in Africa (Haggblade, 2011) and 10-fold in Southeast Asia (Reardon and Timmer, 2014)— due to rapid urbanization and increased urban income (Guinea and Islands, 2011; Malik, 2014). Urbanization makes target markets more accessible to exporters, as agglomeration reduces transaction costs. It also fosters differentiation.

Second, diets are changing fast in emerging markets. Rising income, combined with Bennett's Law, stimulate demand for non-grain foods such as meat, fish, fruits, vegetables, and dairy (Reardon et al., 2018). Moreover, women entering the workforce increase demand for processed foods (Reardon et al., 2014).

Third, food markets in the United States and Western Europe experienced profound transformations over time. Trade liberalization, the rise of supermarkets, and breakthroughs in cold transport technology transformed the U.S. fruit and vegetable market, once dominated by commodity trade in bananas and pineapples, to a wide range of counter-season fruits and vegetables. The share of imports in fresh fruit retail increased from 23 percent in 1975 to 53 percent by 2016, with 90 percent sourced from Latin America. The share of imports of vegetables soared from 6 percent to 31 percent (USDA ERS, 2019a and 2019b).

Fourth, emerging/developing food markets are experiencing even faster transformations, from traditional food markets—fragmented, grain focused, dominated by small retailers and processors—to a transitional stage—characterized by urbanization, longer supply chains, diet diversification, larger retailers and wholesalers, emergence of public standards—and in some cases, a modern stage—dominated by large processors, supermarkets, and wholesalers, and the rise of differentiated products and private standards.

A rapidly emerging middle class of one billion consumers is starting to demand product differentiation in terms of quality, safety, and other attributes that are commonly assigned only to United States and Western Europe in the food market debate.

Fifth, the center of gravity of world food demand has changed. Today Asian/African food imports exceed those of the United States/Western Europe by 25 percent, and in a decade or so will double them.

Sixth, competition from emerging market suppliers is rising dramatically (Awokuse and Reardon, 2018). Products once considered firmly Latin American exports are now grown in many emerging market countries for export and domestic consumption. While Chile, Costa

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<sup>17</sup> This term was introduced by Reardon and Flores (2006).

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Rica, and Mexico dominated exports of off-season fruits and vegetables to the United States and Europe, now new exporters like China have entered the counter-season market. A successful newcomer is Peru, whose development as a horticulture exporter will be discussed below.

Seventh, large food retailers and processors have risen rapidly and now dominate modern food markets. With them come private standards and third-party certification of these standards. Both standards and certifications—including organic—translate into investment requirements along the supply chain (Reardon et al., 1999). Meeting public standards is necessary, but usually far from sufficient, to participate in a market.

Eighth, differentiated products have gained prominence. Agricultural markets are characterized by a product cycle. New products are typically introduced into local markets as niche products. As their production increases and they become commodities, prices are driven down. As profitability declines, competition drives innovation to create differentiated products from the commodity base. Innovations can relate to timing (counter-seasonality), or quality traits like variety, color, taste, or size. Diffusion of innovation then again leads to commoditization.<sup>18</sup>

Ninth, modern agri-food systems demand much more than just food. They demand inputs, such as certified seeds and farming equipment, and services, such as logistics, farm data analysis, or consultancy services. Traditionally, these “beyond food” agricultural markets were dominated by developed countries such as the United States, Canada, the Netherlands, or Israel. In developing their own strong agricultural systems, they built up technological capabilities in key inputs and services (genetics in the United States, greenhouse technology in Canada, logistics in the Netherlands, drip irrigation in Israel) and became the go-to sources of these advanced technologies around the world.

However, Latin America is ripe for exploiting some of these market opportunities and, in fact, is already making inroads. For example, INTA in Argentina has developed new rice varieties that it commercializes worldwide, and has pioneered the use of silage bags for grain storage.

Tenth, the geography of FDI is changing. In colonial times, European and later United States firms invested heavily in agriculture in emerging markets. But the latest round of FDI globalization since the 2000s features firms from emerging markets undertaking FDI in other developing countries and even in developed countries (Awokuse and Reardon, 2018). Examples include Argentina’s Los Grobo setting up their soy production model in Brazil, Paraguay, and Uruguay; Peru’s Camposol buying land to produce mandarin oranges in Uruguay and avocados in Colombia; and Brazil’s JBS acquiring meat production facilities in the United States. Whatever the rationale for these investments—supplying the host country market through domestic sales rather than exports, taking advantage of acquired technological capabilities, or extending temporal production windows for certain products—these opportunities are expected to continue to grow rapidly.

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<sup>18</sup> An example is the Chinese gooseberry, originally grown in China’s mountains. A green variety was renamed kiwi and marketed as an exotic, niche product by New Zealand companies. In the 1990s, it was grown extensively throughout the world as a bulk commodity. It was then bred by New Zealanders into the golden kiwi, a sweeter, differentiated variety with edible skin, currently being commoditized with mass production in Italy and California.

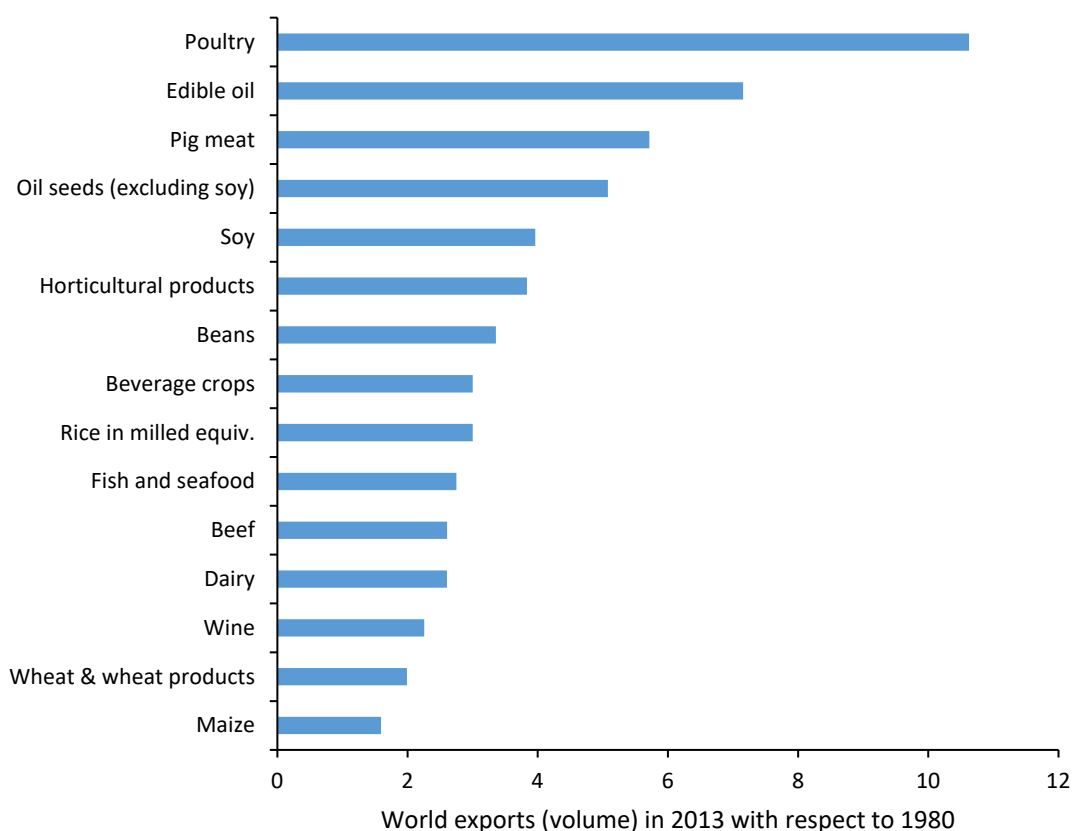
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Latin America is also benefitting from new waves of incoming FDI, often in the form of joint ventures. For example, in 2015 Mission Produce invested in the largest avocado packing plant in Peru, as a joint venture with local investors. Likewise, Limoneira, a California based citrus company, recently established a joint venture with an Argentine lemon producer, taking advantage of the opening of the United States market to Argentine lemons. These partnerships provide enhanced access to foreign markets.

**A New Menu for a New World**

Not all food products hold similar promise. Pushed by increasing income, urbanization, and corresponding diet changes, the demand for some products has been growing faster than others (Figure 2).

Figure 2 Growth in World Demand, Selected Products



Source: FAOSTAT

**Wheat** experienced slow growth due to Bennet’s law and increasing production in wheat consuming countries like India. While **maize** is used mainly for animal feed, the rise in meat consumption in emerging markets has not led to corresponding increases in exports, as Asian countries substituted rice for intensive maize production.<sup>19</sup> In contrast, **soy** farming is

<sup>19</sup> China already produces more maize than rice for animal feed.

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extensive, so China, Japan and Europe don't produce their own. Thus, soy exports, mostly to China for animal feed, have increased four-fold. Argentina, Paraguay, and especially Brazil have captured an increasing share of this market, previously dominated by the United States.

**Fruit and vegetable** exports grew 4-fold as expected from Bennett's Law, but the market became increasingly contested. Latin America's share has been declining as other emerging market suppliers emerge. Still, the sector offers ample opportunities for export growth and differentiation, as the Peruvian case study clearly shows.

The **poultry** export market is the most dynamic. Chicken is cheap, has a neutral taste, and is increasingly sold by supermarkets in cheap bulk. Brazil has become the leading exporter, narrowly surpassing the United States. **Pork**, a favorite in East and Southeast Asia (see case study), has also expanded rapidly, despite being shunned by Muslim countries. **Dairy** exports grew slowly because milk is bulky and expensive to ship, and imported milk powder, a staple in the past, is being supplanted by local dairies in large consuming countries like India and China.