THEMATIC NOTE 3

Accelerating the Development of Agribusiness Enterprises by Using Business Incubators

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SYNOPSIS

This note explores business incubation as a mechanism for effectively and sustainably accelerating the growth of startup enterprises that bring innovative technologies and services to market. Typically startup enterprises face a number of challenges in growing, including the lack of technical assistance, appropriate financing, networks of partners and customers, and infrastructure. Business incubators have effectively supported the growth of enterprises across many sectors, including agriculture. Although the number of agribusiness incubators is limited, interest is growing in expanding them and learning from experience in other sectors. This note summarizes experiences with two agribusiness incubators and offers key lessons learned from others around the world, including business plan development (for example, a ten-year financing and sustainability plan) based on a detailed market assessment and structuring an effective management team.

BACKGROUND AND CONTEXT

Especially in emerging economies, SMEs play a major role in economic development. Formal SMEs contribute up to 45 percent of employment and up to 33 percent of GDP in developing economies; these numbers are significantly higher when the estimated contributions of SMEs in the informal sector are included (IFC 2010). Enterprises are particularly important for generating innovations in response to market demand.

For these reasons, creating links with business development is one of the most important challenges facing agricultural innovation in developing countries. The agricultural sector has consistently struggled to bring new technologies, services, and business models to market at a scale that can have substantial impact. Efforts have been limited by many factors, including the difficulty of coordinating the diverse partners required to develop and deploy new technologies successfully; market failures that discourage private investment; lack of access to financing; limited engagement of end-users in product development; and poor alignment of complementary roles for the public and private sectors (Boettiger and Alvarez 2010). It is critical to find effective ways to help SMEs to sustainably scale up their operations.

Business incubators occupy the space between mechanisms such as business development services (BDS), technology parks, and other platforms for business development. The core of business incubation is a focus on emerging enterprises. Services can range from mentoring to seed financing to influencing policies (box 5.14).

Since 2000, as awareness of their usefulness has grown, the number of business incubators has expanded substantially in developing countries.[1] Countries such as Brazil and India have established large domestic networks of incubators, facilitated by a national association. Table 5.6 provides

Box 5.14 Services That Incubators Can Provide

- Capacity-building, training, and mentoring services.
- Technology testing, demonstration, and certification facilities.
- Technology transfer and IP policy advisory services.
- International networking and collaboration.
- Policy advocacy and market intelligence.
- Links to investors and other financing sources.
- Infrastructure (IT and office facilities, for example).

Source: infoDev (www.infodev.org).

Table 5.6 Business Incubator Typology and Overview

Context and features	Strengths (broad)	Challenges (broad)
Mixed portfolio business incubation		
– Targets high-growth firms in a range of sectors – May select sectors that align with the overall regional or national competitiveness strategy – May exist in environments with little entrepreneurial activity	– Can align with regional and national strategies, germinate new areas of competitive capacity, and provide a locus for innovation in this regard – In environments with little entrepreneurial activity, may include extensive "pre-incubation" and education to source entrepreneurs and businesses	– Where new competitive sectors are under development, time to achieve impact and scale may be long – Where there is little entrepreneurship, attracting clients with high growth potential can be a challenge; it may not be possible to operate at the scale necessary to support the incubator's business model
Technology business incubation		
– Targets high-growth technology firms – Requires foundation of strong technology and human capital infrastructure – Where this infrastructure and human capital are weak, may require extensive pre-incubation activities – May exist in economies in transition	– Can be an economic resource by attracting and developing research, skills, and businesses – Can develop technology as a new source of competitive capacity	– May be challenging to scale businesses beyond seed stage because of lack of financing and difficulties entering international markets
Business incubation with university relationships		
– Frequently the university or academic institution has a role as founder and is a source of resources such as research, expertise, space, and/or funds – Typically targets technology firm, but may work with other sectors	– Opportunity to bridge the gap between research and commercialization or technology transfer – Access to intellectual property and the potential to develop competitive businesses from it – Often provides financial stability for incubators	– Can create "cultural" tensions if academics seen as good researchers but poor managers or if the university is seen as too bureaucratic or risk-averse
Agribusiness incubation		
– Targets firms in the agricultural sector – Aim is to commercialize innovative practices or transform sector firms from slow growth to growth	– Can often have significant economic and social impact by improving the livelihoods of communities – Can have an agritechnology focus and focus on commercialization	– Requires both business and community development skills – May be challenging to enter markets beyond local communities

Source: infoDev, "Incubation Models," http://www.idisc.net/en/Page.MEIA.Incubator.Models.html.

an overview of the types of business incubators that can be deployed in different markets.

INVESTMENT NEEDED

The incubator must be designed based on market demand, which is reflected in a detailed ten-year business model that outlines how the incubator will be sustainable. In establishing a business incubator, the main issues and areas of investment include selecting the appropriate model, establishing a successful management and governance apparatus, and accumulating the appropriate physical assets.[2]

The broad choice in *selecting which type of incubator* to develop is between a mixed-portfolio incubator and a sector-specific incubator, such as an incubator for technology or the agricultural sector (subsector) (table 5.6). For the agricultural sector, both models can be relevant and can support businesses that provide services, products, or new technologies contributing to agricultural innovation.

- ***In a mixed-portfolio model***, the incubator will incubate a business in any sector, pursuing any business activity from technology to agriculture, as long as it believes that the business is scalable. (Scalability is key to ensuring that the incubatee will be able to pay for rent, services, and possibly royalties.) A mixed-portfolio incubator is often a more appropriate choice in developing countries, because the pool of scalable SMEs in a specific sector is limited, and a sector-specific model is not viable without a substantial and ongoing subsidy. For examples, see Fundación Chile, which is a unique, one-stop business incubator, and Technoserve of Mozambique, which leverages BDS to transform entire sectors (infoDev 2011).
- ***A sector-specific incubator*** is appropriate if there is a sufficient pool of clients (incubatees) and demand for agribusiness development. It will be important to leverage other actors in the sector, including well-established enterprises that can be potential clients for the enterprises being incubated. For examples, see box 5.20 on

Rutgers University later in this note and infoDev (2011) on Fundacion Jalisco in Mexico.

- ***A technology-oriented incubator*** is particularly appropriate when technology transfer and commercialization are desired. In that case, the incubator supports actors (often affiliated with research centers or universities) in commercializing a technology. For an example, see box 5.19 on ICRISAT later in this note and infoDev (2011) on CENTEV/UFV (the Federal University of Vicosa in Brazil).

The choice of *business model* determines how the incubator will sustain its operations—in other words, what types of services the incubator will offer to attract the targeted clients and generate revenue.[3] Broadly speaking, three revenue models have been developed for different business incubation environments (box 5.15). Most business incubation environments will combine elements of each model. For agriculture, revenue from tenants and other clients, complemented by public support, may be the most appropriate model, as used in the Agri-Business Incubator.

As with any business, a key factor for the success of business incubator is *strong leadership and management*, which can develop a sustainable business plan, adjust the plan as needed, and ensure that business meets the desired objectives (infoDev 2009). A committed and skilled manager can guide entrepreneurs through the development process and act as their on-site management counselor. This person should have business experience, the ability to analyze the issues facing client entrepreneurs as they develop their businesses, the ability to develop networks that will serve clients, and the ability to work with stakeholders to retain their support for the program. Box 5.16 describes typical staff and tenant levels.

In a business incubator, the *board of directors provides strategic guidance* to management and helps build complementary relationships in the community where the incubator operates. The board is composed of representatives from the management of the incubator (often the incubator manager) and from external partners, including those that provided the financial and material resources to establish the incubator (Medeiros et al. 1992). Board members should be selected from every area in which the incubator has needs.

Finally, the *physical assets* associated with an incubator range from the availability of IT equipment to real estate with sufficient space for the incubator office, offices for incubatees, and other services/equipment. The level of physical assets is determined by the business model, client pool, and incubator type. The two most common choices

Box 5.15 Key Features of Revenue Models for Business Incubators

Revenue from tenants and other clients. Rent (40–60+ percent) is the most common source of revenue in this model, but fees for the business support provided (business incubation fees) and for the use of facilities and other services can be just as important. Hot-desking fees (renting a desk and computer connected to the Internet by the hour) can be important for broader incubation models. This model is financially self-sufficient, given that the incubator relies on "free" buildings, has minimum economies of scale, and often has anchor tenants.

Revenue from sharing in clients' success. This model is based on small equity positions or royalty agreements on gross sales and brokerage fees on raising finance. For example, ParqueSoft in Colombia[a] requires clients to pay 20 percent of their sales as commission. This model can help ensure the incubator's sustainability while aligning both the incubator and client business to growth of the business and its revenue. The model requires stakeholders to have a long-term vision, because it can take ten years to develop revenue streams that will sustain operations into the future. The model also requires managerial sophistication, a well-developed business environment (to form and protect an investment), and functioning capital markets (if it relies on brokerage fees from finance raised).

Ongoing government or donor funding. A long-term commitment from government, a donor, and/or other organization finances the incubator. This model is potentially risky, because it has no additional revenue streams. If funding is discontinued, the incubator is likely to close.

Source: infoDev's Online Incubator Toolkit (www.infodev.org/idisc).
(a) Described in box 5.21.

Box 5.16 Typical Numbers of Incubator Staff and Tenants

The typical incubator will have 20 or more client companies (tenants), some of whom may be virtual clients who are not physically located in the incubator but receive technical assistance and other services. A building of about 2,000 square meters should easily handle 20 tenants. At a minimum, staffing should include a manager with business experience who has been trained in incubator operation, possibly an administrative assistant, secretary/receptionist, and at least one business counselor who provides technical services directly to tenants. A minimal maintenance staff is probably also required, but numbers will vary by location.

Source: infoDev's Incubator Toolkit (www.idisc.net).

are to establish a stand-alone business incubator in an existing building or use a complementary organization already in operation to house and operate the incubator. The ICRISAT incubator, for example, is housed within the ICRISAT facility, which offers both physical space and access to new technologies and equipment.

POLICY ISSUES

The policy issues[4] that arise most often with business incubators include their sustainability, the public sector's role in creating an environment in which business incubators can operate successfully, and adapting incubator models to address social concerns.

Sustainability is a key factor in designing the business model for an incubator. The design must consider the potential client pool (what is the existing market for prospective tenants?) and mix of services that will create a sufficient income base and cover operating costs.

The more business-friendly the market environment is, the more likely a business incubator is to succeed. The World Bank's annual *Doing Business* report ranks countries based on the extent to which their market environments facilitate common business operations and transactions. The report and corresponding website (www.doingbusiness.org) provide recommendations for creating a supportive market environment for business, including business incubators. Specific policy instruments that governments can use to support incubators include tax incentives and early-stage soft funding such as grants (for an example from India, see box 5.17). Since most incubators operate as nonprofit organizations, the public sector can play an important role in providing physical space for the incubator as well as financing to cover operating costs.

Business incubators can target specific sectors such as agriculture or certain segments of society, such as women entrepreneurs. Incubators that have a specific focus may require additional public support, given that they aim to serve a small subsegment of the market and not the market as a whole, which means that they are more challenging to sustain. In Tianjin, China, an incubator for women's businesses has had considerable impact on the growth and sustainability of enterprises that women own and manage (box 5.18).

BENEFITS

The benefits of business incubation range from direct financial benefits in terms of tax revenues to significant improvements in SME sustainability, through which new technologies, services, and business models can be delivered and scaled up. In addition, business incubators raise awareness of entrepreneurship. They create a cluster of entrepreneurial activity around a particular sector, such as agriculture, as the incubator becomes a primary point of contact for actors working in the sector.

The National Business Incubator Association (NBIA), based in the United States, estimates that over 7,000 incubators operate around the world, with more than 1,100 in the United States alone (of which 94 percent operate as nonprofit organizations). In the United States, the impact of business incubation has been well documented (University of Michigan et al. 1997; Knopp 2007). For example, every US$1 of public investment in an incubator has yielded US$30 in local tax revenue; 84 percent of incubator graduates stay in the community where they were incubated; and 87 percent of incubator graduates remain in business. The economic impact and investment return from business incubators, as demonstrated by the experience in the United States, indicates the opportunities for agriculture, particularly in developing countries, to use business incubation for developing and mainstreaming new agricultural technologies.

LESSONS LEARNED AND RECOMMENDATIONS FOR PRACTITIONERS

The experience gained from using business incubators in a number of settings, within and outside agriculture, offers

Box 5.17 The Government of India's Incentives to Support Business Incubators

- Incubators and small and medium enterprises (SMEs) that are clients of incubators are exempt from service tax and corporate tax.
- Foreign equity ownership of incubated SMEs can be as high as 100 percent.
- Seed funds for SMEs (US$230,000 per fund) are managed by selected incubators.

Source: Department of Science & Technology, Government of India (http://dst.gov.in).

Box 5.18 The Tianjin Women's Business Incubator

The Tianjin Women's Business Incubator (TWBI) is China's first women's incubator, started with a grant of US$300,000 contributed by infoDev, a building contributed from the Tianjin Municipal Government, and a cash investment from the Tianjin Women's Federation along with three other local government authorities. As of 2009, TWBI worked with 48 on-site tenants and 10 off-site tenants. At that point, the incubator had graduated 16 companies, creating new jobs for more than 3,000 people; assisted 2,000 women entrepreneurs to obtain microfinance; and provided business training to more than 20,000 entrepreneurs. Operating near full capacity, TWBI has almost reached financial self-sufficiency through charges for office rent, business services, and external training courses.

Source: Author.

many useful guidelines on incubator design, management, and finance. They are summarized in the sections that follow; practitioners interested in developing their own incubators will also want to make use of the resources listed in the references for more comprehensive advice.

Choose the right incubator model for the context

As discussed, in a few markets, particularly in middle-income and larger economies, sector-specific incubators are viable, but they will not be viable in many developing countries without a substantial subsidy. To sustain their operations, most incubators in developing countries must operate as mixed-portfolio incubators by providing services to scalable SMEs in all sectors.

An example of a successful sector-specific incubator is the agribusiness incubator located within ICRISAT in Hyderabad, India (box 5.19). The incubator benefits not only from a large market but also from the substantial pool of R&D available to be commercialized (see IAP 1 for details). The incubator played a key role in building a business around a new seed technology and providing shared equipment for processing sweet sorghum into ethanol.

Develop a comprehensive business plan that captures lessons and evolves to suit changing needs

As noted in the case study of the Rutgers Food Innovation Center (box 5.20), preparing a comprehensive business plan, including a seven-year financing strategy, was essential to success. The Center's iterative approach to design and implementation allowed it to test the business plan before investing substantially in building the center. Incubator development must allow for iteration; ideally, the investment should permit modifications over time.

Incubator management and board must be strong

Strong management will attract clients and help the incubator become viable. For example, a key aspect of the business model used by iPark, an incubator in Jordon, was to recruit successful (serial) entrepreneurs to bring a mix of entrepreneurial experience to the incubator. iPark maintains a strong management relationship with tenants, pursues a flexible approach to solving problems, and recognizes that the incubator will not succeed if its clients do not succeed.

As an incubator evolves, it may need to change the composition of its board.[5] Management must determine which skill set will be most useful in enabling board members to support the incubator's operations. For instance, in many developing countries access to finance for SMEs and incubatees is a significant issue. Therefore, many incubators select Board members who represent local banks as way to sensitize these banks to the challenges that incubatees face in accessing capital.

Ensure access to finance for clients

Figure 5.1 shows that enterprises require different amounts and types of financing (for example, more patient capital

Box 5.19 The Agri-Business Incubator@ICRISAT

The Agri-Business Incubator@ICRISAT (ABI), launched in 2003, estimates that its various programs have benefited more than 40,000 farmers. ABI is an initiative of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in partnership with the Department of Science and Technology (DST), Government of India. It promotes technologies developed exclusively by ICRISAT, jointly developed with collaborators, or agricultural technologies developed by R&D centers of excellence, universities, and other institutions. ABI develops agricultural enterprises by providing various services and facilities:

- ***Entrepreneurship development.*** ABI offers entrepreneurs support from concept to commercialization, with a focus on seed ventures, biofuels, and farm systems solutions.
- ***Technology commercialization.*** ABI is a platform for commercializing technologies developed by public institutions through the creation of agribusinesses. ABI also facilitates the commercialization of technologies and services that have been developed by entrepreneurs and benefit the agricultural sector. Products and technologies incubated by ABI include sweet sorghum for ethanol production, insect-resistant transgenic cotton, and pesticide-free crops produced through organic farming.
- ***Services and facilities.*** ABI offers technology consulting, business development, and training services, as well as office space, laboratories, and agricultural land to test new technologies and services.

Source: Agri-Business Incubator@ICRISAT.

Box 5.20 The Rutgers Food Innovation Center

The Rutgers Food Innovation Center, based in New Jersey, provides business and technology expertise to small and midsize food and agribusiness companies in the Mid-Atlantic and Northeast regions of the United States and, through its outreach capacity, to food and agribusinesses throughout the world. The Center created over 1,000 new jobs by incubating new businesses and over US$200 million in revenue growth for clients, in addition to millions of dollars in local tax revenue. It has assisted more than 1,200 companies and entrepreneurs since it began operations in 2000, including:

- ***Farmers and agricultural cooperatives*** desiring to create new businesses based on value-added agricultural products and/or developing new markets for their existing commodities.
- ***Startup food companies*** coping with challenges such as financing, technology, regulations, market development, and infrastructure requirements.
- ***Existing small and midsize food companies*** seeking to access new technologies, upgrade quality assurance capabilities, enter new markets, train their workforce, and expand and improve their operations.
- ***Retail and food service establishments*** seeking to improve their operations and purchase locally grown New Jersey products.

An extensive feasibility study in 1999 helped identify the prospective client base. The center developed a detailed business plan based on significant primary and secondary market research, a national benchmarking study on best practices in food business incubation, a comprehensive strategic plan, and a seven-year financial pro forma. Based on this plan, the Food Innovation Center began operations in 2000. *A very important consideration was that the center did not begin its program with a dedicated facility but held back until its program was fully developed.* The center operated out of a rented office for eight years before moving into a full-scale facility. During this period it tested its model, fully developed its programs and services, gradually hired staff, and established a network of resources to meet the needs of a

(Box continues on the following page)

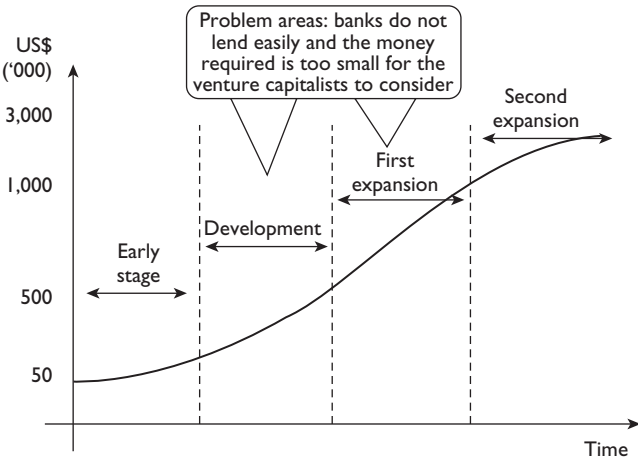
Box 5.20 The Rutgers Food Innovation Center (continued)

broad clientele. It ensured that sufficient demand existed for its services before investing in a building (funded entirely through grants).

The Center's facility consists of a *Client Services Area*, where clients receive marketing, development, and analytical support from concept to commercialization. A *Shared-Use Processing Area* uses an array of food-processing technologies to produce a broad range of value-added agricultural and food products.

Source: Rutgers' Food Incubator, http://www.foodinnovation.rutgers.edu/incubatorlinks.html.

Figure 5.1 Financing Gap for Small Enterprises



Source: infoDev 2008.

early on)[6] at different stages of development. If these amounts and types of financing are not available in the market, enterprises will struggle to scale, and the incubator's impact will suffer. It is important that an assessment of the financing available in the market is made before establishing an incubator to determine if financing gaps exist and can be addressed effectively.

Lessons on real estate investment

The incubator's client base will determine the array of services and physical assets required, including real estate. The client base must consist of a relatively large number and mix of small enterprises, because not all small enterprises are growth-oriented. The type and number of enterprises will determine the space, equipment, and other resources required, as well as where the incubator needs to be located. If the incubator provides only business planning and strategy assistance, only office space is required. If the incubator also provides office space and shared equipment (office equipment and agricultural processing equipment, for example), it needs an appropriate space to house them. If the incubator plans to offer access to the latest agricultural information and/or to enable virtual mentoring and collaboration between enterprises, it will need the appropriate IT equipment. For an example, see box 5.21.

Lessons from financing arrangements

Lessons related to financing incubators differ depending on their source of funding. A model based on revenue from incubatees or from equity may become self-sufficient with time, and the only continuing support it may need will be the use of buildings, free of charge or at cost. In more challenging markets, as noted, a proportion of ongoing government funding is likely to be required, especially if the social and economic return on investment is greater than for other BDS interventions. The financial strain on the public sector may make it very difficult for it to afford long-term funding, however. If a model based on long-term support from an external donor is considered, it will be important to conduct a rigorous cost-benefit analysis to compare incubation to BDS and other business development support mechanisms before committing.

Business incubators that rely upon *rent and client fees* as their main revenue sources cannot, as a general rule, be financially self-sustainable in commercially leased accommodation or where they pay the capital costs of a building, unless they have other, substantial forms of support. Generally this support consists of ongoing financial subsidies by a third party, which can be an unreliable and unpredictable source of funding. It is very hard for business incubators to achieve adequate margins in commercially rented

Box 5.21 Real Estate and Management Arrangements Associated with Parquesoft Centers, Colombia

Colombia's network of ParqueSoft Centers comprises 14 incubators situated throughout the country and managed from a headquarters in Cali. The founder is a highly charismatic individual who used his expertise in information and communications technology to establish ParqueSoft and promote social development through business creation. More than 270 businesses participate in ParqueSoft. These interlocking business entities provide internal as well as external consulting, marketing, and training support. Member companies pay a 20 percent commission on each sale to ParqueSoft, which also receives grants, in-kind donations, rents, and service fees. This revenue allows ParqueSoft to pay for advertising, maintain its building in Cali, and cover other overhead expenses. Local universities provide office space in each location except Cali. ParqueSoft is largely self-sustaining, though it must seek grants and contributions in addition to revenues. Its growth to 14 centers proves it is scalable, and it has required very limited public sector support other than real estate.

The ParqueSoft brand is known internationally and is associated with high-quality services. An association with ParqueSoft allows the startup companies to obtain larger contracts that are effectively subcontracted to the member companies. The use of cubicles in ParqueSoft buildings permits more intense networking and interaction by the companies. Although this setup builds the ParqueSoft brand and makes each company seem competitive with larger, more established companies, it should be pointed out that it also diminishes the efforts of individual companies to establish their own identities and brand equity.

Source: infoDev 2009.

accommodation. They run the risk of either failing financially or having to cut costs until they are really nothing more than real estate operations. More commonly, business incubators attempt to rent buildings at a purely symbolic rate (for example, US$1 per year) or to obtain funds to purchase or construct their own facilities, both of which are more reliable strategies for securing on-going support.

Taking a small proportion of *equity* or a *royalty on gross sales* for a period can be a very good way for an incubator to receive payment for its value-adding services once the company being assisted has succeeded (not up front, when the company is short of cash). This success-sharing strategy aligns the business incubator's mission with that of its clients. Increasing numbers of technology incubators take a small equity position or negotiate royalty agreements as a condition for membership in an incubator. Realistically, taking equity applies only to high-growth and generally intellectual property-driven companies, in situations where clear exit mechanisms (such as initial public offerings or trade sales) exist. This option makes little sense for most service companies or for locations where exit mechanisms are unclear. In that case, royalties may be a better approach.

Business models that rely on sharing clients' success have proven somewhat problematic. Returns from the equity position, royalties, and brokerage on finance cannot be relied upon for financial sustainability in the short term. It can take ten years to realize returns, and a portfolio of at least 20 companies is required to spread the risk. A high level of management expertise is also required.

Aside from a sound financing model, incubators need to "walk the talk" and demonstrate *high levels of financial management capability* to incubated enterprises. Financial management consists of planning, overseeing, and controlling the incubator funds, whether they are brought in through services or provided by partners and investors. Mechanisms need to be developed that allow the incubator manager to know accurately the amounts available, the needs, and the investment capacity. Additionally, financial management should focus on bringing in new sources of funds for the incubator.