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COMMON SENSE SUGGESTS that there is a gap between basic science and innovative products. The new federal Business Innovation Plan (*Plano Inova Empresa*) aims not only to bridge the gap between basic science and innovative products but also promote innovative businesses.

The challenge is to boost innovative businesses that have both market potential and growth prospects. One way is through risk capital funds—seed capital, venture capital, and private equity—which, especially in the early stages, seek companies that combine technological development and innovation. The next step would be the stock market.

Risk capital is financing rapid over-the-counter tests for tuberculosis; analysis and sales of online insurance; and a new breed

of wasps that can kill the larvae of pests that attack soybean and other grains (see box). These are products created to meet identified market needs efficiently and profitably.

“If the company provides a solution to meet a market need and we can capture the value of this solution to the market, we invest in the company,” says Marcio Spata, manager of the Department of Investment Funds of the National Bank for Economic and Social Development (BNDES).

#### **DIVERSITY**

Risk capital funds work with a portfolio of investments in companies, of which two or three will have enough success to pay for the entire portfolio. Investors know that not all promising ideas will

succeed. "Of course, what goes wrong has to be eliminated. There is always the possibility that the investment does not give the expected result, but there is also the chance to be very successful," says Robert Binder, coordinator, Committee for Entrepreneurship, Innovation, Seed Capital and Venture Capital, Brazilian Association of Private Equity & Venture Capital (ABVCAP).

Understanding this "loss and gain" logic is important in promoting the sector and hence the Brazilian economy. "This pushes real economic development because this type of investment is what motivates others to invest. If Brazil is innovative, competitive, we will have economic development that will attract new investors," Binder says.

In Brazil, despite the international crisis risk capital funds registered 31% growth in committed capital between 2011 and 2012, from R\$64 billion to R\$83 billion, according to an ABVCAP survey. "What the venture capital investor is seeking is high profit. It is an alternative investment that one believes will have high financial return. This type of investment looks for dramatic innovations that create a big impact," Binder explains.

Currently, most of the investment (88% in 2012) is in less risky private equity funds, which finance companies well established in the market with high income and access to capital markets through initial public offerings (IPOs). In contrast, the comparatively riskier venture capital funds—which finance companies with market experience, good sales, and expansion by means of high-profit products—accounted for only 3%

## Bug business

### Kalinka Iaquito

RAISING WASPS AND OTHER INSECTS can be a very profitable business. Diogo Carvalho and his associates solicited seed capital for a project based on biological control of agricultural pests, and in 2001 established the Bug Agentes Biologicos company. Negotiation with the Criatec fund was fast, about six months, and today the company is one of the stars of the Criatec portfolio—in 2012 it placed 33rd in a global ranking of the 50 most innovative companies by *Fast Company* magazine, by passing Petrobras, Embraer, OGX, and other Brazilian corporations.

"We started the company with seven employees, servicing 100 acres or less a month, and now we have 70 employees servicing about 2,000 hectares a day," Carvalho says. The flagship product is a minute wasp, *Trichogramma*, which brings in about 70% of company revenues. Bug Agentes Biologicos company sells a solution with nearly 40,000 fertilized wasp eggs per gram. As they grow the wasps are released to act as a parasite on the eggs of major crop pests, such as moths and butterflies. According to the company, this costs clients 30% less than common insecticides—and unlike pesticides, wasps are usually applied only once a growing season, when cultivation begins.

Targeting growers of such major crops as soybeans, sugarcane, corn, cotton, wheat, and beans, the company has a department dedicated to developing new products. "We want to increase the range of products for agricultural producers. We know we will not solve all the problems with just one," Carvalho says. Because it is a tropical country, Brazil has a great variety of pests that cannot always be eliminated by wasps alone. Bug Agentes Biologicos is now working on insects and mites that can eliminate the soybean bug.

Carvalho stresses that the company intends to increase the share of biological pest control in Bra-



Profitable business: The minute *Trichogramma* wasp at work.

zil, which is currently the largest market for pesticides. Although the demand for biological products has grown—either because of environmental awareness or market standards, especially international—there is still a combination of biological and chemical pest control practices. But this scenario can be changed. "Brazil is a major exporter of technology for producing insects. We know we can supply this market at a cost often lower than for insecticides," Carvalho says. "We believe we can be a Brazilian biological multinational."

For Carvalho venture capital fund support made his company viable; it also built up the company's staff marketing skills. "The company's participation in the [Criatec] venture capital portfolio made Bug Agentes Biologicos company more visible in the market and projected a promising professional image of biological pest control."

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*Marcio Spata*

of investments, mostly from the BNDES. The challenge is to boost seed capital funds, which invest in innovative business, often still on paper. These investments are even riskier, so these companies tend to get more investment from government resources, either through BNDES or FINEP.

Criatec is an example. It is a fund that invests seed capital in small but promising companies with sales up to R\$6 million that are highly innovative. Launched in 2007, Criatec has invested in 36 companies with average investments of no more than R\$1.5 million; its total capital commitment has been R\$100 million. For the next two editions of the program (to be implemented in 2013 and 2014) the capital commitment should be around R\$200 million. “Criatec went after the Brazilian science and innovation that can capture value in the market,” says BNDES’s Spata.

### **CHALLENGE**

How can an innovative company get its product, still experimental, accepted by customers?

“Between the visionaries and pragmatists there is an abyss. And most companies fall into this abyss because they cannot get

their products from the concept to the marketing stage. The challenge is to cross the abyss,” according to José Arnaldo Deutscher, managing partner of Antera Gestão de Recursos, which administers Criatec. He emphasizes that innovation cannot be understood only as creation; it presupposes market entry, and good company governance.

Spata points out that Criatec emerged as a way of structuring a supply chain for innovative companies, in various fields. “Seed capital is strategic for Brazil because from it will emerge future big businesses,” he says.

Another agency that has a powerful venture capital presence is the federal Funding Authority for Studies and Projects (FINEP), which since 2000 has approved

### **Types of Risk Capital Funds**

**Angel Investor** – Individual or funding agency that provides capital for a business start-up to build on innovative ideas, usually in exchange for convertible debt or equity.

**Seed Capital** – Investment in the initial phase of the company or project. Often there is only the idea, without a structured company. The purpose is to validate the business model, supporting the first steps of the company.

**Venture Capital** – Investment in small and medium-sized companies with high growth potential. Venture capital finances the first expansions, leading the company to new market heights.

**Private Equity** – Investment in larger consolidated companies with high revenues (reaching millions of reais) that normally use financial leverage and often are preparing to enter the stock exchange market.

Source: Criatec guide.

27 investment funds, of which five are seed capital. Committed private capital is about R\$4 billion, plus R\$500 million from FINEP. FINEP expects to invest R\$100 million to R\$150 million a year, which will enable approval of three to four new funds annually.

### **OPPORTUNITIES**

However, for companies financed by capital and venture capital to stay in the market until they can qualify for the stock exchange, they must look for opportunities in foreign trade. Deutscher of Antera emphasizes that it is critical to add value to exported products and particular commodities. "The policy of innovation is absolutely essential for a very simple reason: Brazil can be the food basket of the world. If we can, for example, process soybeans at 30% of current production cost, that will be more profitable," Binder added.

In 2006, the Deloitte survey of "Global Trends in Venture Capital" pointed out that the risk capital market was going through unprecedented internationalization of operations, indicating a connection between consolidated and emerging markets. Currently, the economic situation of large investors in European countries and the United States has slowed the growth of risk capital in Brazil. ABVCAP data indicate that last year the domestic share in investment funds exceeded foreign capital.

Yet there are fears that the risk capital market will stagnate or grow more slowly. "Even in countries where risk capital funds are well developed, there is increased

risk aversion related to seed and venture capital," Spata says.

In addition, risk capital funds have only been operating in Brazil for about 10 years, compared to nearly seven decades in the United States. "Foreign investors do not like the lack of a track record in evaluating a manager," said Augusto Costa, head of the FINEP Department of Investment in Funds. "The way that Brazil makes these investments is a bit different from the practices common in the international market, which may be a complicating factor," Costa says. He notes that foreign investors find it strange that institutional investors have seats on the investment committee, in order to follow the development of each company rather than the fund itself, globally.

### **DIFFICULTIES**

Local investors criticize the Brazilian fiscal and tax scenarios, infrastructure, logistics, and regulation.

Binder argues that in addition to innovation policies Brazil needs to create competitive conditions for entrepreneurs. "In Criatec's portfolio, the MagnaMed company got permission to export to Europe in a year, but it took four years to get a license to sell in the domestic market. If it had been faster they could be earning four times as much today," he says.

Deutscher stresses that Brazil does not yet understand that investing in innovation is about more than allocating more resources to research and development. It is above all creating a set of tangible and intangible assets, which presupposes risks: "To innovate is to risk." 