New organisational and institutional vehicles for managing innovation in South Asia : opportunities for using research for technical change and social gain

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NEW ORGANISATIONAL AND INSTITUTIONAL VEHICLES FOR MANAGING INNOVATION IN SOUTH ASIA: OPPORTUNITIES FOR USING RESEARCH FOR TECHNICAL CHANGE AND SOCIAL GAIN

Vamsidhar Reddy T.S.[1], Andy Hall[2] and Rasheed Sulaiman V.[3]

Abstract

This paper sets out to explore the nature of new organisational and institutional vehicles for managing innovation in order to put research into use for social gain. It has reviewed four classes of such vehicles found in South Asia. The first two — contract farming and organised retailing — represent what is becoming commonly-accepted in policy circles: namely that the private corporate sector can play a more prominent role in agricultural development, particularly in arrangements that combine providing access to markets in combination with access to technology needed to service those markets. The second two classes of vehicles — hybrid enterprises and social venture capital — represent a new, albeit fluid in definition, class of initiatives and organisations that combine features referred to as bottom-of-the pyramid and below-the-radar innovation. For each of these classes of innovation management vehicles this review has mapped the diversity of emerging examples and discussed their relevance for putting research into use for social gain. The paper concludes by saying that it is these new and as yet poorly-understood modes of innovation that have the greatest potential to effect change, although developing ways of supporting them is going to require some creative public policy instruments.

Key words: Agricultural Research, Innovation, Innovation Management Vehicles, Development, Policy, Contract Farming, Organised Food Retail, Social Business Enterprises, Social Venture Capital, Value Chain Development, Hybrid Enterprises, South Asia, Networking

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LIST OF ACRONYMS

ABFL	-	Aftab Bahumukhi Farm Ltd.
AEC	-	Agro Enterprise Centre
BOP	-	Bottom of the Pyramid
BRAC	-	Bangladesh Rural Advancement Committee
CIIE	-	Center for Innovation, Incubation and Entrepreneurship
FDI	-	Foreign Direct Investment
FNCCI	-	Federation of Nepalese Chamber of Commerce and Industry
GDP	-	Gross Domestic Product
GIAN	-	Grassroots Innovations Augmentation Network, Gujarat
ICT	-	Information and Communication Technology
IFMR	-	Institute of Financial Management and Research
ISB	-	Indian School of Business
MMPO	-	Milk and Milk Products Order, India
MSSL	-	Mahindra ShubhLabh Services Ltd.
NABARD	-	National Bank for Agriculture and Rural Development
NGO	-	Non-Governmental Organisation
R&D	-	Research and Development
S&T	-	Science and Technology
SEAN	-	Seed Entrepreneur Association of Nepal
SHGs	-	Self-Help Groups
SMEs	-	Small and Medium Enterprises
SRISTI	-	Society for Research and Initiatives for Sustainable Technologies
SVCs	-	Social Venture Capital funds

TNC	-	Trans-National Corporations
UN	-	United Nations
UNDP	-	United Nations Development Program
USA	-	United States of America
VC	-	Venture Capital
VIPB	-	Venture Investment Partners Bangladesh Ltd.

1. INTRODUCTION

There no longer remains any doubt that innovation is the means through which societies achieve their economic and social aspirations. The recent understanding of innovation as a process and capacity for change — rather than as a widget-like technological artefact — is having fundamental implications not only for science and technology policy but also for economic and social policy. The focus is no longer just on the creation of new widgets and ideas through research, nor is it on the diffusion of these ideas in society. Rather, the focus is on both of these in combination with the circumstances and mechanisms that allow these ideas to be combined with others, modified and adapted and, critically, put into productive use. This has meant that the search for and support of organisational and institutional vehicles that can manage innovation in ways which can achieve society's aspirations is emerging as a central strategy for development policy. For economic growth and competitiveness it is clear that the most effective organisational vehicle for innovation is the entrepreneur or company and the appropriate institutional vehicle is the market with its price and demand signals. But what is the appropriate organisational and institutional vehicle for managing innovation that serves social and sustainability aspirations?

This paper explores this question in relation to the agricultural sector and from the science policy perspective of trying to (re)position agricultural research in the dynamic organisational and institutional landscape of the sector. The agricultural sector, particularly in developing countries, has a number of unique features, which means it requires its own S&T and sector development policies. It is mostly made of very large numbers of small-scale producers (farmers); technological efficacy is highly context-specific; most activity is informal and unorganised; innovation is frequently decentralised and user-led (although largely unnoticed); sector development is of high social relevance because most farmers are poor and because of the food security implications for poor food consumers. Also, while companies have always been active in input and output markets, vertical integration of farmers into the value chain has been absent or weak.

Accelerating technological change has been a key agricultural sector development strategy. Unlike the industrial sector — where importation of machinery, equipment and expertise was key to technological capability building — in the agricultural sector the major policy tool

involved investments in public research and advisory services. This research-led approach has had notable successes but it has also been recognised as having wasted huge resources, with much of research failing to find practical applications. Disillusioned with the effectiveness of technology dissemination efforts as a way of getting research into more widespread use, the policy focus in the last 10 years has been on exploring the nature of partnerships needed to share and use ideas and on examining the role of private companies, in particular. The logic behind this is that such arrangements manage the innovation process and it is, thus, within these sets of arrangements that agricultural research, science and technology can find a meaningful way of bringing about change.

This paper reviews a range of organisational and institutional developments that are becoming prominent in the South Asian agricultural sector and which may have the potential to act as a mechanism to organise and manage the innovation process for both sector and social development aspirations. We review four main mechanisms:

- **Contract Farming:** A mechanism in which production and supply of agricultural produce takes place based on advance contracts within quality, quantity and price parameters and between primary producers and buyers
- **Organised Food Retailing:** A system of parallel integration of systematic procurement and sale of agricultural food produce under a company's brand name
- **Social Business Enterprises (Hybrid Enterprises):** Business initiatives set up to address social problems. These are promoted with a combination of social and financial objectives and to varying degrees
- **Social Venture Capital Funds:** Venture capital initiatives focusing on supporting business enterprises that have social objectives

This paper reviews these cases from two perspectives. The first perspective focuses on the opportunities these mechanisms present for managing innovation processes in ways that can accelerate technical change and, in particular, make better use of research, research expertise and research-derived ideas.

The second perspective is the social and sustainability relevance of these initiatives. Can these arrangements really manage innovation in a way that achieves not only economic objectives but also social objectives of poverty reduction and equity?

The paper starts off by reviewing current debates about innovation entrepreneurship and development; recent concepts from the business literature on accessing large markets of poor people; and ideas from the innovation studies literature, which are flagging the existence of new modes of innovation that exist out of sight of the corporate business and policy community — below-the-radar innovation.

The paper concludes by saying that it is these new and as yet poorly understood mechanisms of managing innovation that have the greatest potential to effect change, although developing ways of supporting them is going to require some creative public policy instruments.

2. THEORETICAL PERSPECTIVES

2.1 Innovation and Entrepreneurship

Joseph Schumpeter is widely recognised as a pioneer in modern innovation studies thinking, elaborating the individual entrepreneur's role in the innovation process (Schumpeter, 1934 and Hagedoorn, 1996). Much of the subsequent literature around the theme was built on Schumpeter's early conceptualisation. Despite a subsequent shift in emphasis from individual entrepreneurs' role in the innovation process to that of formalised R&D teams in corporations, the role of the individual entrepreneur is once again being appreciated in recent years (Gijsbers, 2009). Their role is now seen as crucial for rural development, as entrepreneurship drives small and micro businesses with growth and innovation potential (UNDP, 2004).

2.2 Private sector and Development

"Inclusive Development" models

In the last decade many international development agencies have proposed an increased role for the private sector in areas traditionally dominated by government departments and non-governmental organisations in order to address developmental aspirations (for e.g., the UN Commission on the Private Sector and Development, 2004; UNDP, 2008). These agencies expect the private sector to bring commercial business principles and market development approaches to rural development strategies, and ensure financial sustainability — which is often lacking in conventional development approaches (Arora and Romijn, 2009). Recent thinking flags the importance of the private sector for different types of innovation activity and at different points in the innovation trajectory (Hall, 2006; 2009). Within this broad conceptualisation the private sector has been perceived as fulfilling the following roles:

i. As a source of R&D activity and expertise (Echeverría, 1998)
ii. As a client-responsive mechanism for distributing products embodying the results of scientific research (Morris, 2000)
iii. As conduits to high-value markets and as a source of information about the nature of demand and regulation in these markets (World Bank, 2006; Kaplinsky and Morris, 2001)

iv. As a source of new business models and innovation processes that can efficiently service the needs of large markets of poor people (Prahalad, 2004; Kaplinsky et al, 2010)

v. As a mechanism for delivery services and products that sit at the interface of public responsibility and private interest, such as agricultural extension (Sulaiman and Sadamate, 2000) and responses to livestock disease (Dijkman, 2009) and crop pest outbreaks

vi. As a broker or intermediary agent, making links, negotiating partnerships and policies and communicating information, aspirations and agendas (Klerkx et al, 2009)

There is a now a decade-worth of well-documented difficulties in engaging the private sector as a development partner. Tensions between the public and private sectors have hampered partnership formation (Hall et al, 2002; Spielman et al, 2009). Intermediary organisations capable of brokering new partnerships with the private sector have often been absent (World Bank, 2006). Examples of successful public-private sector partnerships in the agricultural sector do exist (Byerlee and Echeverría, 2002). However, only a small number of high-profile examples involving multinational corporations have been widely-publicised and these types of mechanisms have tended to dominate the debate (Hall, 2006). This has eclipsed the policy importance of strengthening the role of local private sector organisations, with a resulting neglect of the role of strengthening relationships between local private sector firms and other players within the innovation landscape (ibid).

"Bottom-of-the-Pyramid" Proposition

In recent years several large Trans-National Corporations (TNCs) have started to explore the notion of expanding their customer base by harnessing the (latent) purchasing power of the poor in the South (Arora and Romijn, 2009). Business strategist C.K. Prahalad championed this line of thought (Prahalad and Hart, 2002; Prahalad and Hammond, 2002; Prahalad, 2004) through the Bottom of the Pyramid (BOP) idea. He argued that TNCs could significantly benefit by focusing on the 4-5 billion poor people (earning less than $2 a day) who occupy the bottom of the economic pyramid. In turn, the corporations could contribute to improving the livelihoods of the poor.

The Bottom of the Pyramid idea was considered an appropriate way to address challenges faced by large corporations in achieving widespread market saturation when faced with weakening growth opportunities in developed country markets (Hart and Christensen, 2002; Prahalad and Hammond, 2002). The idea has been readily accepted by a large number of business strategists (Arora and Romijn, 2009). The logic behind the Bottom of the Pyramid approach is that large corporations could expand their customer base by accessing a segment of people previously (and wrongly) considered high-risk and unreliable (Budinich, 2005). The approach was expected to address the ultimate goal of poverty reduction by providing goods and services for the poor at lower prices (Budinich, 2005), who often end up paying more than the affluent due to market and supply chain inefficiencies (Dimri and Sharma, 2006). Others have also written up the possibilities of raising living standards through such an approach (Bendell, 2005; Jaiswal, 2007; Karnani, 2007).

However, the original BOP proposition does have its critics. Some, such as Sprague (2008), criticise it for a top-down approach due to a heavy emphasis on deriving profits from selling to the poor. Others, such as Karnani (2007), feel the size of the BOP market is over-estimated, while Landrum (2007), Walsh et al (2005) and Jaiswal (2007) question the novelty of such an approach and cite several cases to prove such ideas pre-existed the articulation of the BOP concept and had been practiced by local private sector players. Others have questioned the transferability of BOP models between different markets and economies (Rost and Ydren, 2006; Crabtree, 2007; Ault and Spicer, 2008). Some have argued that developmental impact cannot be expected without enabling the poor to increase their productive capacity and earning power (Karnani, 2007; Jaiswal, 2007; Hopkins 2007; Kasturi Rangan et al, 2007).

Some of this criticism was addressed by making adjustments to the BOP idea in version 2.0 of the BOP Protocol (Simani et al, 2008). The idea is an attractive one for many large private sector corporations, which have developed business strategies based around it (Arora and Romijn, 2009). Some have focused on the agricultural sector in Asia. In India, ITC's (formerly the Indian Tobacco Company Ltd.) "e-choupal" venture (an initiative that uses the internet to link farmers in order to transmit agricultural information and market inputs and outputs) is widely referred to as a successful BOP initiative from a large private sector company (Jaiswal, 2007).

"Below the Radar Innovation"

Recent thinking challenges conventional notions on the relative positions of transnational corporations and developing country-based private sector firms in the hierarchies of innovation. Citing cases from China and India, Kaplinsky et al (2010) argue that certain new patterns of institutional change and capacity building in these countries is resulting in innovations that often go un-noticed by conventional frameworks. They argue that these emerging patterns have the potential to disrupt global corporate and locational hierarchies of innovation. Kaplinsky et al believe local firms and value chains in developing countries have a better understanding of the needs of consumers at the BOP and have technologies and organisational structures to meet these needs effectively. Ultimately, this gives them the potential to compete successfully with TNCs. In short, the authors argue that new organisational and institutional vehicles for managing the innovation process, which are appropriate to local needs, are emerging.

These are conceptually well-founded ideas, but what is the reality? This is an important question for agricultural science and technology (S&T) policy as the key challenge remains one of deploying research as part of the innovation process and managing that process. If the geographical and organisational locus of innovation is really moving to the South, what new opportunities do these present for embedding research and are there new ways of organising and managing innovation appropriate to social development aspirations.

These issues are explored in the subsequent sections by addressing the following questions from the literature review.

- What new organisational and institutional vehicles for managing innovation are emerging in South Asia?
- What factors are driving their emergence?
- What products and services do these vehicles deliver?
- What opportunities do they present for using research as part of the innovation process?
- What is their relevance for the poor?

3. RECENT TRENDS IN THE ORGANISATIONAL AND INSTITUTIONAL LANDSCAPE OF SOUTH ASIAN AGRICULTURE

As a result of the dynamic organisational and institutional landscape of the agricultural sector, discussed in the previous section, a number of recent trends are now emerging in South Asia: increasing corporatisation of the agricultural sector in general, with a large number of corporate firms entering agricultural value chains through different business models; and the emergence of a confident and aspirational middle-class society as a result of liberalised economies. For the purpose of the current study, four sample cases have been selected to represent these recent trends. They are: Contract Farming, Organised Food Retailing, Social Business Enterprises and Social Venture Capital funds. These cases are explored through a literature review and are presented in the subsequent section.

(A) Contract Farming

What is it?

Contract farming has been defined by different authors differently for different models. Key and Runsten (1999) defined it as '*an intermediate institutional arrangement that allows firms to participate in and exert control over the production process without owning or operating the farms*'. Baumann (2000) defined it as '*system where a central processing or exporting unit purchases the harvests of independent farmers and the terms of purchase are arranged in advance through contracts*'. Eaton and Shepherd (2001) defined it as '*an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices'*. For an Indian context Singh (2008b) defines it as *a 'system for the production and supply of land-based and allied produce by farmers/primary producers under advance contracts, the essence of such arrangements being a commitment to provide an agricultural commodity of a type, at a specified time, price, and in specified quantity to a known buyer'*. In the case of India, these contracts are either formal or informal. There are instances where these contracts have been broken both by farmers and companies. There are no legal frameworks in place to uphold such contracts. In most cases, these operate based on mutual trust.

What are the drivers?

In India the key policy driver for contract farming seems to be the New Agricultural Policy proposed by the Indian Government in 2000, which envisaged that "private sector

participation will be promoted through contract farming and land leasing agreements to allow accelerated technology transfer, capital inflows and assured market for crop production" (Chand, 2004). In Bangladesh, the economic reform processes seems to have provided enough encouragement for private enterprises and NGOs to set up contract farming ventures mainly in the case of poultry, dairy and high value vegetables (Mandal et al, 2005).

Current status and examples

Contract farming was in existence in the Indian sub-continent in different forms since the colonial period (Shoja Rani, 2007). Pepsi Foods Limited is widely regarded as the first modern-day multi-national corporation to initiate contract farming in India — to grow tomatoes in the state of Punjab in 1989 — as a pre-condition set by the Government of India to re-enter the Indian market (Business Standard, 2010; Gulati et al, 2008). Since then, several private enterprises have entered the realm of contract farming in India (see Gulati et al, 2008; 2010 and Singh, 2010 for an overview of contract farming). In Bangladesh, apart from private firms such as Pran and Aftab Bahumukhi Farm Limited (ABFL), NGOs such as BRAC and Proshika have also launched contract farming ventures (Mandal et al). In Nepal, commodity associations such as the Agro Enterprise Centre (AEC) and the Federation of Nepalese Chamber of Commerce (FNCCI) in eastern Nepal launched contract farming ventures in tomato, mandarin orange and banana. The approach was also taken up by the Seed Entrepreneur Association of Nepal (SEAN) for vegetable seed production (Poudel, 2010). Table 1 presents some examples of these ventures.

Table 1. Examples of Contract Farming Ventures by Private Companies in South Asia

Contracting firm	**Products**	**Location**
PRAN and Aftab Bahumukhi Farm Limited (ABFL)	Poultry and high value vegetables	Bangladesh
BRAC and Proshika–led enterprises	High value vegetables	Bangladesh
Pepsi Foods Ltd./ Frito Lays India Ltd.	Tomato Potato	State of Punjab, India States of Maharastra, West Bengal, Karnataka and Punjab in India
Nijjer Agro Foods Limited	Tomato	
Hindustan Lever Limited	Tomato Wheat	Punjab, India Madhya Pradesh, India
Mahindra Shubhlabh Services Limited	Basmati Rice and Maize Grapes	Punjab, India Maharashtra, India
Sam Agritech	Grapes, Pomegranate, Chickoo, Mango, exotic vegetables	Andhra Pradesh, India

Global Green and Capricorn Foods	Gherkins	Several states in India
FieldFresh Foods Pvt Ltd.	High value fruits and vegetables	Several states in India
Suguna, Shanti, Pioneer, Godrej Agrovet and Venkateshwara Hatcheries	Poultry	Several states in India
Bharti	Basmati rice	Punjab, India
Several players in each Indian state after the Milk and Milk Products Order (MMPO)[4]	Milk and milk products	Most of the states in India

Products and Services delivered

The relative advantage of contract farming over non-contract farming has been highlighted by several studies in India. For instance, there is evidence that contract farmers receive higher gross and net returns due to higher yield and assured price (Bhalla and Singh, 1996; Chidambaram, 1997; Rangi and Sidhu, 2000; Haque, 2000; Dileep et al, 2002; Agarwal et al, 2005; Tripathi et al, 2005; Nagaraj et al, 2008; Mandal et al, 2005) even taking into account the different crops and locations. However some studies have reported higher costs of production (Dileep et al, 2002; Kumar, 2006; Singh, 2008) and highlighted problems in contract farming ventures, such as breach of contracts and other instances of malpractice by both farmers and companies (Bhalla and Singh, 1996; Singh, 2002; Haque, 2003; Swain, 2008).

Opportunities for innovation

Contract arrangements would appear to have an inherent range of innovation management support that could be associated with them. Potential forms of support could feasibly include: providing access to knowledge about markets, consumer demands, seed varieties preferred by markets, technology, expertise, input supply and credit. For example, Pepsi Foods Ltd. introduced new seed varieties and crop production practices for its tomato contract farming venture with the help of a strategic collaboration with the Punjab Agricultural University and Punjab Agro Industries Corporation Limited (Singh, 2001; Spice, 2003; Gulati et al, 2008). This helped improve yields from 16 ton/he to 52 ton/he in the region (Spice, 2003; Gulati et al, 2008; Business Standard, 2010). It also set up an R&D centre in Punjab to develop quality

[4] The Milk and Milk Product Order (MMPO) was first introduced in 1992 under Section 3 of the Essential Commodities Act, following the economic liberalisation policy of the government of India. It was last amended in 2002 when the concept of cowsheds was removed (Dairy India 2007). The MMPO helped improve the supply of quality milk and also increase the share of organised players in the dairy sector.

seed and evolve other technologies and is promoting water conserving technologies such as drip irrigation and direct seeding among its contracted farmers, apart from collaborating with other agencies to provide credit and insurance (Business Standard, 2010). Similar results have been reported by Mahindra ShubhLabh Services Limited (MSSL) for Maize and Basmati Rice in Punjab (Singh, 2005). Some contracting firms have also set up technology transfer centres, such as Tata's *Kisan Sansar* (meaning Farmers' World). Some have set up one-stop shops, which make seed, technology, credit and other services such as extension and insurance available to farmers. Examples of these "agri-hubs" include DSCL Hariyali Kisan Bazar, Tata's Kisan Kendras, Godrej Aadhar, ITC's e-Choupal and Choupal Sagar (Gulati et al, 2010).

Relevance for the poor

While contract farming initiatives have provided opportunities for farmers to diversify from conventional low-value agriculture to upgraded high-value agriculture, there are apprehensions that smaller farmers might be pushed out of these lucrative production niches. Several studies report that contract farming firms work mostly with large and medium farmers (Bhalla and Singh, 1996; Singh, 2002; Haque, 2003; Dev and Rao, 2005; Singh and Asokan, 2005; Khairnar and Yeleti, 2005; Kumar, 2006; Swain, 2008). However, for labour-intensive crops, such as gherkins and other high-value vegetables, preference for small farmers was also reported (Birthal and Joshi, 2007; Erappa, 2006).

(B) Organised Food Retail Ventures

What is it?

Organised food retailing could be defined as a system of parallel integration of systematic procurement and sale of agricultural food products under a brand name.

What are the drivers?

Reardon and Hopkins (2006) and Reardon and Berdegue (2007) identified three groups of countries where modern retailing was initiated during three successive periods. India was in the third group, where organised food retail ventures took off in the late 1990s and early 2000s. Possible drivers for this were identified by Reardon et al (2003) as: market liberalisation, large-scale Foreign Direct Investment (FDI), availability of procurement and

logistics technology (ICT) and declining transport costs. During this period a unique regional agri-food chains system emerged in Asia, propelled by the disappearance of regional trade barriers and the emergence of regional institutions that foster integration at the regional level (Thompson and Cowan, 2000). Significant increases in FDI at the regional level in Asia also led to the emergence of a number of important regional players in the agri-food system. A study by Deloitte-Stores (2007) predicted faster growth for the organised retail business in developing countries due to growing numbers of younger consumers in developing countries. A study by Joseph et al (2008) analysed that retail sales growth was directly proportional to Real GDP and Real Private Final Consumption expenditure and indicated that substantial increase in disposal income among Indian households since the mid-1990s could be a driver behind the 'supermarket revolution'.

Current status and examples

In India organised retail in food and grocery segments has been growing at annual rates between 16 and 50 percent over the past few years (Reardon and Gulati, 2008). Since this has been from a small base, continuation of such high growth rates is expected to significantly impact on existing value chains (Joseph et al, 2008). Rapid growth in the organised retail sector has also resulted in consolidation to achieve economies of scale (Chakravarthy and Kurien, 2007). Kumar et al (2008) classified organised retail into four formats (see Table 2):

Table 2. Organised Retail Formats in India

Format	Organised retail chains	Size	Population targeted	Pricing	Items carried
Hypermarkets	RPGs Giant, Pantaloons' Big Bazaar, Trent's Star India Bazaar	25000-50000 sq. ft	Middle-income groups	Lower than Maximum Retail Price	Most categories
Supermarkets	Food World, Food Bazaar (Pantaloons) and Nilgiris	3,000-5,000 sq. ft	Everyone	Maximum Retail Price	Processed foods and groceries
Discount stores	Margin Free and Apna Bazaar	Varies but less than 3,000 sq. ft	Middle-income groups	Everyday low price (lowest)	Processed foods and groceries
Convenience stores	Trumart, Spencer's Daily, Vishal	Varies	Everyone	Maximum Retail Price	Varies, but specialised in each store

Source: Kumar et al, 2008

Most food retail players have tended to be region-specific. For example, RPG's FoodWorld, Nilgiris, Margin Free, RPG's Giant, Varkey's and AV Birla's More tend to dominate in the Southern region of India; Sabka Bazaar has a presence only in and around Delhi; Haiko and Radhakrishna Foodland are Mumbai chains; while Adani stores are currently located only in Ahmedabad (Chillibreez, 2010).

Goods and Services provided

Several studies on fresh fruit and vegetable retail chains in India have confirmed relative advantages for farmers connected with organised retail. For example, farmers contracted by retail chains received comparatively higher prices (Dhananjaya and Rao, 2009; Alam and Verma, 2007), higher net profits (Joseph et al, 2008; Mangala and Chengappa, 2008; Birthal et al, 2005) and also had lower transaction costs (Joseph et al, 2008; Alam and Verma, 2007). However, some reports suggest that some of these retailers source their produce directly from *mandis* (whole-sale markets), thus not benefiting primary producers (India FDI Watch, 2007).

Opportunities for innovation

This model has much more tenuous links to farmers as it has a promiscuous sourcing strategy. Potentially at least, if this model starts to concentrate on more concrete links with its producer base (i.e., farmers) options for technological upgrading support as seen in contract farming may apply. The extent to which this potential is being fulfilled depends on the specifics of the retail model that a particular company follows. According to reports, most organised food retail ventures are involved in arrangements of procurement without any contracts or commitments, apart from paying farmers at price for the produce (Sulaiman et al, 2010). However, there have also been reports of some retailers providing farmers some knowledge. For example, ITC's Choupal Fresh stores (urban retail outlets for fruits and vegetables) initiative is backed by extension services, including demonstration plots and advice on crop calendars and cultivation techniques and practices, as well as cold chain support and other services (Gulati et al, 2008). As many companies are still trying to develop sustainable revenue models based on this approach, cost-cutting measures inevitably mean that they look for the lowest-priced source of produce and shy away from commitments toward technological upgrading. Part of the problem is that without adequate supply chain infrastructure it is difficult to make the model work. Reliance (India's largest corporate agency involved in organised food retailing) has committed large-scale investments to supply

chain infrastructure development (IndiaRetailBiz, 2009). There remains the possibility, therefore, that with this in place innovation support services to farmers (technology, inputs, etc.) may form a viable and necessary element of this mode of retailing.

Relevance for the poor

Several studies have indicated that farmers connected to organised retail in India have larger land holdings (Joseph et al, 2008; Mangala and Chengappa, 2008; Alam and Verma, 2007) and higher proportion of irrigated land (Joseph et al, 2008) than those supplying to traditional market channels. This is to maintain strict quality parameters required by the business. However, the other dimension of this business, with lower prices being offered by most food retail chains (Gaiha and Thapa, 2007; Joseph et al, 2008), has the potential to benefit poor consumers.

(C) Social Business Enterprises or Hybrid Enterprises

What is it?

These are new types of organisational forms with a combination of social and financial objectives in varying degrees. These could have different legal forms, such as "business ventures within non-profit organisations" (Foster & Bradach, 2005) and "business ventures with social objectives" (Yunus, 2007). Some refer to these as Sustainable Entrepreneurship (using traditional business skills and knowledge to accomplish social and environmental goals) (Emerson and Twersky, 1996). The key similarity among all these is their approach of achieving social objectives through competitive business ventures (Spear, 2006).

What are the drivers?

Organisations of this type have been rapidly increasing in number in the last decade (Times of India, 2010), although a precise explanation for this has yet to be articulated. Increasing populations of young people in South Asia, greater wealth among the middle-class, higher confidence levels, unleashing of entrepreneurial talent through economic reforms, etc. could be some possible reasons. Funding shortages (Draper, 2005) and general enhanced awareness about social and environmental problems among corporations (Beheiry et al, 2006) are also cited as reasons for their emergence.

Current status and examples

There is a growing trend among well-educated individuals in South Asia in showing a preference for social developmental ventures over high-paying corporate jobs. They tend to employ business principles to address complex social problems. While calling this "mixing business with social good", they are setting up enterprises with a combination of social and financial objectives. Some individuals have set up businesses that provide alternative value chains for producers and consumers with transparency and better prices. One examples of this is the "Minimandi" or "Mandi on wheels" — a store that home-delivers vegetables and fruits on the basis of Internet-placed orders — which was set up by a graduate of a prestigious management school, who quit a high-paying corporate job to start the venture (Times of India, 2009). Another example is the "eFarm" initiative — a similar vegetable procurement and sale initiative based on Internet orders — that was launched by a former software professional, who quit his job to start an initiative to help farmers (Startup Story, 2009). Others have launched ventures to help farmers improve their production practices. For example, the "Digital Green" initiative is the brainchild of a USA-educated, aeronautical engineer. The initiative trains villagers to make locally-specific, need-based agricultural technology videos and play them at a nominal service charge (Economic Times, 2010). Other ventures, such as "Earthy Goods" (an initiative started by a marketing professional to help farmers understand high-value market requirements and produce for these markets) (India Today, 2010), are providing farmers with necessary post-harvest, market-based product development skills as well as facilities to market their produce at better prices. The terminal markets set up by the IFMR trust provides access for transparent and efficient markets. Table 3 provides some key features of these initiatives.

Table 3. Key Features of Social Business Enterprises

Name	Background of founding entrepreneur	Coverage	Type of activities	Value chain activities
Earthy Goods	A marketing professional from a reputed management college	Many Indian states (through partners)	Capacity building and infrastructure to help small farmers produce marketable produce	Post-harvest, processing, marketing
e-Farm by Matchbox Solutions	A software engineer with ten years of experience	Primarily Tamil Nadu state, India	Infrastructure to help small farmers connect to consumers	Marketing
Digital	An aeronautical	Primarily	Dissemination of locally-	Production

Green	engineer trained in the US to be a space scientist	Karnataka	relevant production technology — identified, developed and distributed by farmers	
Agricultural Terminal Markets Network Enterprises of IMFR Trust	A banking professional, with many years of experience	Piloting in Gujarat state, India	Provides efficient and transparent market infrastructure	Marketing
Minimandi/ Mandi on wheels	A management graduate with two years experience in a high-paying corporate job	Cities in Gujarat, India	Alternative value chain for vegetables	Marketing

Products and Services delivered

These initiatives provide a wide-range of services. While some are helping to upgrade existing value chains (for e.g., Minimandi and Mandi on Wheels), others are creating alternative value chains (e.g., eFarm). Some initiatives are helping farmers access production technologies (for e.g., "Digital Green") and building necessary skills to produce for markets (e.g.,"Earthy Goods"). Others have created transparent and efficient markets (IFMR Trust). In essence these initiatives are playing the roles traditionally played by NGOs in helping the poor. The key difference, though, is the sustainability of their solutions. While NGOs depend on donor funds, these hybrid agencies are built on sustainable business models. Often, they device innovative strategies to find ways of addressing existing problems by partnering with a wide range of appropriate stakeholders. However, their operations are localised and they face constraints of achieving scale, except for micro-credit organisations. But initiatives such as the "iDiya" of Indian School of Business (ISB), Hyderabad, which provides seed money to social entrepreneurs, and the growing numbers of Social Venture Capital funds are helping promote many such localised entrepreneurs to achieve much-needed scale.

Opportunities for innovation

This is clearly a very broad and diverse set of arrangements and business models. Consequently the inherent potential options for managing innovation are numerous. These include the following:

1. Providing access to production and post-harvest technology as part of business models connecting farmers to markets (e.g., "eFarm")

2. Promoting the dissemination of locally-relevant information to farmers through a business model aimed at training and establishing micro-entrepreneurs selling knowledge services (e.g., "Digital Green")
3. Providing training on new forms of production and organisation for accessing high-value markets (e.g., "Earthy Goods")
4. Accessing Social Venture Capital funds to support new initiatives
5. Connecting to research agencies and helping put relevant technologies to use
6. Building networks of relevant agencies

Relevance for the poor

These types of initiatives are underpinned by an appreciation for social and environmental causes, which makes their relevance for the poor extremely promising. In most cases, they work directly with the resource-poor and the needy. For example, "Earthy Goods" works with women, small and marginal farmers and artisans. Self Help Groups (SHGs) are the focus of the "eFarm" initiative, while "Digital Green" focuses on resource-poor farmers.

(D) Social Venture Capital Funds (SVC)

What is it?

In simple terms, these could be understood as a form of venture capital investing that provides capital to businesses deemed socially and environmentally responsible (Wikipedia)[5]

What are the drivers?

There is no literature that analyses drivers for rapid growth of these initiatives in South Asia. However, there is some indication that the exponential growth of micro-credit ventures is a possible reason for the general increase in venture capital finance.

Current status and examples

Although SVCs have been around for several years in developed countries, the numbers of such initiatives has only been growing rapidly in South Asia in the last three years (Outlook Business, 2010). These are agencies that invest start-up capital in Small and Medium Enterprises (SMEs) that have a social cause attached to them. Some are profit-oriented, while

[5] http://en.wikipedia.org/wiki/Social_venture_capital

others are not-for-profit agencies. An important feature of these initiatives is that they "push" SME managers on the issues of growth and scale not only in order to improve returns but to raise social benefits (Outlook Business, 2010). Although many such SVCs focus on micro-credit because of its assured returns, there are others that support innovative ventures aimed at supporting the agricultural sector. Such Social Venture Capital Funds play an important role in supporting the ideas of hybrid organisations discussed in the earlier section. Some government-backed SVCs also exist in India.

Table 4. Some Examples of Social Venture Capital Funds

	Ownership	**Sphere of operations**	**Sector**	**Year of establishment**	**Size of fund**
Avishkaar (www.avishkaar.in)	Private	India	Renewable energy, waste management, information and communications technology, agro-based technology, handicrafts, healthcare and rural innovations	2002	$14 mn
VentureEast www.ventureeast.net	Private	India	Diverse		$250 mn
IMFR Trust www.imfrtrust.co.in	Private	India	Diverse		$100 mn
Elevar Equity www.elevarequity.com	Private	International			$40 mn
Intellecap http://www.intellecap.com/	Private	India		2002	
Nexus India Capital http://www.nexusvp.com/	Private	India	Diverse		
Villgro http://www.villgro.org/	Private	India		2001	
NABARD venture capital fund for dairy and poultry http://www.nabard.org/departments/venture_capital_fund.asp	Government	India	Dairy and Poultry	2004	$26 mn
Gujarat Grassroots Innovations Augmentation Network (GIAN)	Government	India			

http://north.gian.org/node/326					
Center for Innovation, Incubation and Entrepreneurship (CIIE) http://www.ciieindia.org/	Government	India			
National Innovation Foundation http://www.nif.org.in/	Government	India		2000	
Society for Research and Initiatives for Sustainable Technologies (SRISTI) http://www.sristi.org/cms/	Government	India		1993	
Grameen Fund http://www.grameen-info.org/grameen/gfund/index.html	Private	Bangladesh		1994	
Venture Investment Partners Bangladesh Limited (VIPB) www.vipblimited.com	Private	Bangladesh		2006	
Oikocredit	Private	International			
Acumen Fund www.acumenfund.com	Private	International		2001	$40 mn
Gray Matters Capital www.graymatterscap.com	Private	International			$12 mn
Oasis www.oasis-fund.co.il	Private	International	Solar energy, Water technologies, Smart desert agriculture, Eco-tourism, Traditional industries		$30 mn
Song www.songadvisors.com	Private	Indian			$17 mn

Products and services delivered

These agencies mobilise capital from different sources, explore potential enterprise initiatives and provide them necessary financial and non-financial help to set them up.

Opportunities for innovation

As financing is the key innovation support these initiatives provide, SVCs, thus, enable the types of hybrid enterprises we discussed in the previous segment. Indirectly they enable the range of innovation management support discussed in that context. In addition, since this is venture capital support we can infer that this assistance is not simply restricted to providing financial resources. Rather, inherent in the VC mechanism is the complementary support that venture capitalists provide to incubate and nurture the entrepreneurs they invest in. Innovation management support associated with venture capital, therefore, includes access to technology but also networking support to ensure that entrepreneurs are connected to the resources needed for them to succeed. There is little documented evidence to show how this form of support works, but there is potential to explore the ways in which they provide innovation management support.

Relevance for the poor

These initiatives have social and environmental objectives as underlying principles and thus their relevance to the poor seems promising. Again empirical verification of this is required.

4. NEW VEHICLES FOR MANAGING INNOVATION FOR PUTTING RESEARCH INTO USE FOR SOCIAL GAIN

This paper sets out to explore the nature of new organisational and institutional vehicles for managing innovation in order to put research into use for social gain. It has reviewed four classes of such vehicles that are found in South Asia. The first two — contract farming and organised retailing — represent what is becoming commonly accepted in policy circles: namely that the private corporate sector can play a more prominent role in agricultural development, particularly in arrangements that combine providing access to markets in combination with access to technology needed to service those markets. The second two — hybrid enterprises and social venture capital — represent a new, albeit fluid in definition, class of initiatives and organisations that combine features referred to as bottom-of-the-pyramid and below-the-radar innovation. For each of these classes of innovation management vehicles the review has mapped the diversity of emerging examples and discussed their relevance for putting research into use for social gain.

The picture that emerges has the following notable features:

- The regional corporate sector (notably in India) does have the potential to provide farmers access to technology as an element of institutional innovations aimed at extracting market efficiency for their companies
- This technology access (and sometimes research-related expertise access), however, is more closely associated with the corporate sector in contract growing arrangements rather than organised retailing arrangements
- Organised retailing arrangements rely on more promiscuous sources of supply and, therefore, don't necessarily develop the types of relationships with farmers that would lead companies to invest in assisting farmers with technology access and other forms of innovation support
- Part of the reason that organised retailing adopts a promiscuous procurement strategy is because the current supply chain infrastructure is such that direct farm procurement and assembly of produce is difficult
- Investment by the corporate sector in supply chain infrastructure is starting to take place and this holds out the possibility of increasing the possibility and potential rewards to the corporate sector when it comes to providing farmers access to technology and other innovation support services.

- The relevance of both these innovation management vehicles to the poor is modest. Contract farming tends to target larger farmers, the exception being in certain specialist crops. If organised retailing does develop into providing innovation support services it is likely to follow the same patterns of social relevance. Ironically organised retailing does seem to be acting as a mechanism for providing fair price fruit and vegetables to poor urban consumers
- Hybrid enterprises, by their very nature, are very diverse and numerous (albeit small in scale)
- Similarly, by definition, they have both commercial and social good agendas and, therefore, at least have the stated intention to be relevant to poor people. (Although this has yet to be systematically and empirically verified)
- The examples mapped out in this review illustrate the way these enterprises, for pragmatic reasons, have felt the need to provide a large range of innovation support services. This does include helping access technology (and sometimes research services directly) but it also points to a much wider range of innovation support activities that seem to be important (providing access to appropriate financing, training, network building and, more generally, brokering access to a wide array of resources and services).
- Closely related to the hybrid enterprises are the social venture capital funds. Again, by definition these support innovation by way of providing financial resources and they have the stated intention of targeting socially–relevant initiatives and organisations. (However, this has yet to be systematically and empirically verified).
- Inherent in the venture capital concept is the provision of incubation nurturing support in the receipts of investments. This has a strong flavour of innovation management support, although exploring the empirical details of this has been beyond the scope of this review and is not yet documented in secondary sources because of the relatively recent emergence of this class of investment funds in the South Asian region.

What, then, are the promising options here for putting research into use for impact at scale and for social gain? Perhaps rather counter-intuitively, corporate sector activities around contract farming and organised retailing are relatively weak. Certainly they have been found to provide access to technology in some instances, but in reality the range of innovation support services they provide (when indeed they do provide them) is rather limited in scope.

This is also limited in terms of the crop and livestock commodities that are the targets of such support — corporate retailing is mainly interested in developing supply chains for fruits and vegetables but less interested in a range of crops produced by marginal farmers in difficult environments. Furthermore, it is unlikely that these approaches are ever going to target the poorest farm households unless less specific incentives are provided to do so. Such incentives have been put in place in the telecommunications and insurance sector, but are easily circumvented.

On the face of it the hybrid enterprise sector and attendant social venture capital arrangements are much more promising. They have a stated ambition to be socially-relevant and deploy a much wider range of innovation support mechanisms, and hence represent a much broader-based vehicle for innovation management that goes beyond the accessing technology role that has dominated debates on this topic. Ironically because they go beyond (but include) technology access they are actually a more effective way of getting research into use. The logic here is that they combine different forms of innovation support — access to capital, access to markets, access to expertise, etc. It is only when these tasks are combined that innovation actually occurs and research gets used.

What are the policy and investment implications of this? Partnering with the corporate sector, while attractive from a public relations and administrative perspective, may not be the innovation vehicle best suited to achieving social goals. The hybrid enterprise sector, while largely untested and unresearched, does look more promising as a target for support. Administratively, of course, supporting a diverse and atomised sector such as this is difficult. There is also the question of what sort of support should be provided from the public purse. There are two broad options that could be tried. The first is to establish dedicated support services to help hybrid entrepreneurs develop and execute the types of innovation management tasks that are emerging as important to their companies. For the organised large-scale enterprise sector, business parks have been used, but this might be inappropriate in the hybrid sector.

An alternative would be to partner with the social venture capital funds that are already financially nurturing these enterprises. The support required from the public sector is not, however, financial. In India, for example, these funds have more capital than they can

currently invest. A more useful role for the private sector would be to strengthen the technical capabilities of these funds in terms of research and agricultural sector knowledge. This could be achieved by, for example, university secondments, sandwich courses and internships. In the longer term, capital will become more limited and these funds will need to attract private sector investors. One way the public sector could support this is by supporting the publication of sector investment guides. These could lay out the investment potential in the hybrid sector and review the risks and trends that potential investors are likely to encounter. Such reviews could also undertake ethical auditing. The reason behind this is that a unique attraction of these funds for private investors — over and above the attractive rates of return — is the relevance to social agendas. Publicly-sponsored auditing of the social relevance profile of different funds would be important to guide investors' choices.

5. CONCLUSION

Clearly there is a set of organisational and institutional developments taking place in South Asia that at the very least show promise for managing innovation for putting research and knowledge more generally into use for social gain. These are ambitious recommendations for a study with the modest scope of this paper. What is required next is further empirical elucidation of the hybrid enterprise models discussed here and a more detailed analysis of their potential for social gain.

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