



Risk management and finance along value chains of Small Island Developing States. Evidence from the Caribbean and the Pacific

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ABSTRACT

The paper analyses agricultural risks and risk management in selected Small Island Developing States which are part of the African Caribbean Pacific country group. Focus is on the value chains of fruits, vegetables and spices. A survey was conducted in Grenada, Jamaica, Fiji and Vanuatu, aimed at identifying sources of risk which are most important to value chain stakeholders; the nature and quality of existing and potential risk management mechanisms; and the possibility of enhancing them in view of improving the functioning of the value chains. The sample included farmers, processors, traders, retailers, extension agents, Government officials and private services providers. Results reveal limited ability to handle price and production variability, due to lack of both horizontal and vertical co-ordination along value chains, reduced use of support services, notably credit and underinvestment in equipment. In addition, lack of demand contributes to make insurance markets incomplete and characterised by undersupply or lack of customised products. Promoting light forms of vertical and horizontal co-ordination, such as production contracts and producers' associations, as well as value chain-based credit and finance may address some of the issues highlighted.

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Introduction

Diversifying agriculture and supporting business development is the centrepiece of a number of rural development programmes in several countries and in many Small Island Developing States (SIDS) belonging to the African Caribbean Pacific (ACP) group. In these countries, long standing efforts are underway to overcome the economic regime shaped by trade preferences and promote an increased integration of agriculture into wider business chains. Taking a value chain perspective implies looking holistically at all activities leading from primary production to consumption. Value chains have been recognized as effective entry points to support small holder farmers, and promote their incomes through better market integration and value addition.

The development of value chains in SIDS can be hindered by several constraints: thin domestic market, scarce natural resources and high level of strategic imports such as food and fuel; inability to influence international prices; uncertainty of supply due to remoteness and insularity; lack of economies of scale and vulnerability to natural disasters (Briguglio, 2003; Commonwealth Secretariat, 2000). Despite differences among countries, most SIDS are

characterised by high transaction and communication costs that may prevent a full use of potential comparative advantages (Winters and Martins, 2004; FAO, 2005; IFC, 2009)¹. Vulnerability to natural disasters is also more significant in SIDS compared to other countries, especially in terms of potential damage per unit of area and, due to the small size of the territory and high recovery costs per capita which may impact negatively on the economic resilience in the aftermath of a disaster.

Increasingly complex value chains entail both increased opportunities and risks for the economic agents involved – we shall refer to them as stakeholders – and especially for farmers, which are normally more numerous and physically more dispersed. They often operate on a relatively small scale and tend to be among the most vulnerable in the value chain. Common risk sources that can affect farmers and other stakeholders include price, production and personal risks. These can produce permanent negative effects on revenues, as well as hinder the organization of value chains: in the absence of appropriate mitigation and management tools, risky events can disrupt business relationships that may take a long time to rebuild.

To further complicate matters, risks can affect stakeholders along the value chains in different ways and to different extents.

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¹ According to the IFC (2009), SIDS rank 89th in terms of the ease of doing business out of a list of 181 economies. Ranking is based on 10 indicators of business regulation.

A production loss experienced by farmers may not be a problem for processors, as long as they can source raw agricultural products elsewhere. In fact, value chains normally incorporate more or less formal and effective arrangements aimed at managing risks, which are also defined by the institutional environment. Policies too can be ultimately conceived as tools to manage risks, typical examples being protection, subsidies or price stabilisation for farmers.

This paper aims at shedding light on risks and risk management mechanisms in selected SIDS which are part of the ACP country group. Specifically, those that are striving to diversify their agriculture, are switching from the traditional agricultural economy based on sugar and bananas, or that are driven by trade preferences, to the development of more complex value chains such as those based on other fruits, vegetables and spices.

Reviewing risk management mechanisms was identified as an important element of this process. Participatory processes undertaken within the All ACP Agricultural Commodity Programme (AAACP), financed by the EU, highlighted that several difficulties encountered by farmers and other stakeholders in organizing production and marketing along value chains and maintaining organizations through time can be framed as risks, and possible solutions as risk management mechanisms. Consequently, an exploratory survey was organized on risks and risk management along value chains in selected SIDS countries.

Primary information was collected in Grenada, Jamaica, Fiji and Vanuatu on risk considered in a broad sense, taking into account simultaneously elements that contribute to shape it along value chains. Policies and access to credit were considered as factors affecting farmers' and other stakeholders' ability to cope with expected price variability, along with technical capabilities, the availability of expertise and advice and the participation in associations, commodity groups and other more or less formal organizations.

The next section offers a review of the basic concepts employed in the paper concerning risks and risk management along value chains, and discusses risk layering. The following section describes the survey and the methods applied to analyse the data collected, while the results of the analysis are illustrated in the fourth section. The last section concludes and discusses areas for further investigation and action.

Conceptualizing and assessing risk management along a value chain

Risks affecting agri-businesses activity can be classified according to different criteria; the following six categories are frequently referred to in the literature (Eeckhoudt et al., 1992; European Commission, 2001; Hardaker et al., 2004).

Price risk, arising from sudden unanticipated changes in input and/or output prices; it can affect one or more stakeholders depending on its origin².

- Production or yield risks, mostly arising from natural hazards which affect crops quantity and/or quality; all stakeholders are exposed to such risks.
- Asset risks, arising from theft, fire or other loss and damage of equipment, buildings and other productive assets for agriculture, processing or trading.
- Institutional risk, resulting from changes in national and international policies or in the concentration of market power along a value chain.

- Financial risk, arising from unexpected changes in the cost of capital, exchange rate fluctuations or disruptions in the ability to access credit and/or equity losses.
- Human or personal risk, due to death, illness or injury of the labour force.

Value chains can be conceived as networks that support three types of flows: physical, financial and informational. These are responsible for movements of physical products, payments and lending arrangements, and for co-ordination among physical and financial flows. Hence, value chains interact with markets and consumers in order to extract revenues from sales of products (Khan and Burnes, 2007).

Risks and their management are more complex along a value chain than for an individual agent. Risk transmission along a value chain has not yet been fully explored. The Commodity Risk Management Group of the World Bank has recently proposed an operational framework to assess risks in an agri-food chains (CRMG, 2007). Risk and vulnerability are framed in a system approach, which takes into account exposure, potential losses and options for risk management as well as relations with markets outside the chain by both individual stakeholders and groups.

The CRMG (2007) framework borrows extensively from the literature on vulnerability. Risks are mostly related to the chain as a whole, with limited attention to its distribution among stakeholders. However, risks are also shaped by the way in which transactions are organized along the chain, within the continuum that extends from spot markets, on the one hand, to full vertical integration, on the other. In turn, the organization of transaction stems from the associated costs which are attached to flows along the chains.

The technical characteristics of production play a significant part in the organization of flows. Storable products such as grains, for instance, can resort to organized markets and hedge risks through forward and option contracts (Glover, 1994). More generally, the range of price risk management tools widens when storage is possible. Warehouse receipts, for instance, provide another means to convert inventories into readily tradable assets. They are directly negotiable, and can be traded, sold, swapped, used as collateral to support borrowing or accepted for delivery against a derivative instrument such as futures, or traded in a commodity exchange (Lacroix and Varangis, 1996).

Transaction costs embedded in perishable products, instead, call for a more complex setup. There are clear incentives to organize and pre-determine transactions, in order to reduce the associated costs, for instance through contracts (Minten et al., 2006)³. Contracts are in fact an intermediate term between full vertical integration and spot markets. Farmers and buyers resort frequently to contracts as mechanisms to transfer and share risk (da Silva, 2005). The more products become specialised, and the more they involve high unit values, the more contracts become complex to write and enforce. This frequently calls for a wider role of associations in dealing with other stakeholders; typically, farmer associations can negotiate contracts with traders or large-scale retailers. The details of such contracts, in fact, do include mechanisms to transfer risk, whose direction indicates whether and how idiosyncratic risks are effectively pooled along the chain; or market power is employed to increase the risk borne by some stakeholders.

² For instance, a collapse in the retail price will typically affect all stakeholders along the value chain, while an increase in the price of a fertilizer will affect mostly farmers, by squeezing their profits if they are price takers in the output market.

³ There are several types of contracts. Swinnen and Maertens (2006) classify them in two main categories: marketing contracts, which are (verbal or written) agreements between a contractor and a grower that specify *ex ante* some form of price and outlet. Production contracts, instead, are more extensive forms of coordination, in which contractor supplies items such as detailed production practices, extension services, inputs, quality and quantity of a commodity and a price.

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