Promoting Agricultural Value Chain Integration in Central Asia and the Caucasus

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Agriculture is one of the most important sectors for the development of countries in Central Asia and the Caucasus (CAC) region. It supports the livelihoods of the majority of the population in rural areas and significantly contributes to food security in this region. The sector also generates employment for peoples of the region, with a share ranging from 24.2% in Kazakhstan to 51.7% in Georgia. Although the share of gross domestic product (GDP) generated by the agriculture sector has generally declined in the region since 2000 (Figure 1), the agriculture sector still comprises a large share of GDP in Tajikistan (27.2%), Armenia (21.7%), Uzbekistan (18.8%), and the Kyrgyz Republic (16.6%) (ADB 2015).

Despite its importance to the region, the output of the agriculture sector in the CAC countries has not reached optimum levels due to the limited market base and narrow range of agro-food products. One strategy to address this issue is to develop an integrated agricultural value chain through consolidation, agglomeration, and specialization.

To effectively integrate agricultural value chain in the region, there is a need to overcome the key challenges in the upstream, midstream, and downstream levels of the value chain, from delivery of vital agricultural inputs to distribution of agro-food products.

Two possible strategies are proposed: greater involvement of the private sector through public–private partnership schemes, and development of the agriculture and agribusiness sectors concentrated around major economic corridors.

Framing agricultural value chains

In general, AVC refers to a range of goods and services needed for an agricultural product to move from the farm to the consumers. At the heart of AVC are the various activities and actors involved, from the production process to delivery of a product to the market, whose final objective is to generate value for the consumers (ADB 2012). It also involves analyzing how the various actors in the chain exchange knowledge and vertical and horizontal learning to enter the market and add value (UNIDO 2010). In understanding the AVC, two possible approaches can be used: the supply chain management approach and the Agriculture+++ (Agriculture Plus Plus) strategy (Wong 2016).
The supply chain management approach. Unlike a normal production-centric approach of focusing exclusively on the production level, the supply chain management approach employs a more holistic agribusiness approach of considering the sequence of key activities and their attendant supporting economic activities at the various levels of the chain, such as delivery of agricultural inputs, production and processing of agricultural products, and marketing and distribution of those products. By doing so, it links agriculture with the manufacturing and services sectors of the economy along the supply/value chain and trading network (Figure 2). This approach also takes into consideration the economic activities (and hence income, employment, and wealth generation opportunities) of intermediate suppliers and support services (machinery, logistics, foundries, business services) as well as foundation providers (infrastructure, finance, human resource development, regulatory environment, and new technology including information and communication technology), which are needed in urban and rural areas (Wong 2016).

The Agriculture++ (Agriculture Plus Plus) strategy. Agriculture++ is a strategy based on Michael Porter’s value chain analysis\(^2\) and cluster development.\(^3\) This marks a conscious attempt to encourage involvement and investments in the economic activities in the upstream (research and development, certified seeds, high-value varieties, farming systems), midstream (processing, high-value end uses), and downstream (packaging, food safety, traceability, branding, targeted markets) segments of the value chain (Wong 2016). By doing so, the first plus (or value adding increase) will come from productivity increase as a result of better seeds, irrigation, fertilizers, mechanization, credit, and agro-support services, while the second

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**Fig. 1 Agricultural Value Added (% of gross domestic product)**

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uzbekistan</td>
<td>18.8</td>
<td>22.9</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>14.5</td>
<td>22.9</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>16.6</td>
<td>27.3</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>16.6</td>
<td>27.2</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>4.5</td>
<td>8.6</td>
</tr>
<tr>
<td>Georgia</td>
<td>9.1</td>
<td>21.7</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>5.7</td>
<td>17.0</td>
</tr>
<tr>
<td>Armenia</td>
<td>21.7</td>
<td>25.1</td>
</tr>
</tbody>
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plus (or value adding enhancement) is expected to come from broadened and deepened economic functions in various strategic segments of the supply chain (Figure 3). This strategy, coupled with the mapping of the weak links of specific supply chains, will help prioritize and sequence the investments or interventions required, especially in terms of attracting the appropriate strategic foreign direct investment and/or technical assistance that can bring along requisite technology and innovations as well as markets (Wong 2016).

Developing an integrated agricultural value chain in Central Asia and the Caucasus region

Currently, the development of an AVC is based on the CAC region’s key agricultural products: fruits, vegetables, livestock, meat, and dairy (ICARDA 2013, Adriano 2015). However, each country’s AVC operates quite independently from the others while serving their respective domestic markets (Adriano 2015), due mainly to different strengths and competitive advantages of each AVC.
Thus, coordination and integration of the agro-food value chain (AVC) within the CAC region would lead to increased specialization and agglomeration that can expand their product portfolio and market outreach (Adriano 2015).

Moreover, by developing an integrated AVC, countries in the CAC region can embrace several opportunities. First, the CAC region can benefit tremendously from the People’s Republic of China’s plan to develop its western regions and its land linkage to the rest of the world, especially Europe, by railway through Central Asia (Intal 2016). Second, there is a growing demand for diverse food products that are safe and superior in quality from the increasing number of middle-income consumers in developing Asia and the Middle East. Third, the formation of an AVC has pro-poor benefits as it would provide jobs and incomes to low-income residents in the rural areas (Adriano 2015).

Challenges to developing an integrated agricultural value chain

Despite the perceived economic contributions of AVC, several key challenges (weak links) in the upstream, midstream, and downstream levels need to be addressed to ensure the effectiveness of AVC integration in the CAC region (ICARDA 2013, Adriano 2015).

First, at the upstream level (farm production segment) of the value chain, the numerous, widely dispersed, and unorganized small farms that dominate the production of fruits, vegetables, dairy, and livestock are characterized by poor production systems and low productivity.

At the midstream level (processing), food processors lack reliable supply of quality fruits, vegetables, dairy, and livestock inputs from farms. They find it difficult to deal with numerous and widely dispersed
small farm producers. The majority of food processors are informal and largely unorganized small and medium-sized enterprises (SMEs), which impedes specialization and agglomeration. SMEs use antiquated equipment because of the lack of access to finance, do not meet the international standards for food safety and quality, and are not linked effectively to the urban domestic and foreign markets as well as large agro-processors.

Finally, at the downstream level (marketing and distribution), there are no dedicated regional trade hubs and logistics platforms for perishable products such as fruits, vegetables, meat, and dairy products. Logistics infrastructure (e.g., refrigerated storage) and services (e.g., trucking, freight forwarders, etc.) for transit of exportable food-related products are generally inadequate for perishable products. Facilities such as abattoirs and domestic markets (bazaars) are unsanitary and lack appropriate logistics facilities and services for perishable products. Since road and rail transport systems are not connected, railway lines do not extend to customs clearance areas and roads in border checkpoints are often narrow. These logistics bottlenecks, exacerbated by unreliable supply, have increased transaction costs of transporting products and inputs of the agro-food sector.

Strategies to overcome the challenges of agricultural food value chain

One strategy is to have greater involvement by the markets through public–private partnerships (PPP). Within this scheme, the government works closely with the private sector toward achieving the same goals. For example, the government can provide long-term land lease and selective subsidies and exemptions, while the private sector, as the main driver for AVC operations, can provide the expertise to run the business efficiently (ADB 2008, Adriano 2015).

There are several good practices on utilizing a PPP scheme to enhance the integration of AVC. In Viet Nam, the Partnership for Sustainable Agriculture (PSAV) was established under the direction of the Ministry of Agriculture and Rural Development and supported by Grow Asia4 to engage the private sector in achieving the Sustainable Development Goals of Viet Nam’s agriculture sector (Son 2016). The highlight of PSAV is its success in utilizing a PPP scheme where the private sector and the government work together in providing training programs for farmers and improving their productivity, enhancing crop quality, and increasing the farmers’ yields as well as their net income (Son 2016).

The PSAV also provides useful insights on how a PPP scheme can help solve some of the key challenges in the upstream level of the CAC region’s AVC, particularly poor production systems and low productivity (ICARDA 2013, Adriano 2015). Under a PPP scheme, governments in the CAC region and the private sector (e.g., major agricultural industries) can jointly develop training programs for farmers and/or farming SMEs, and provide them with good agricultural inputs (e.g., seeds, fertilizers, pesticides, etc.) to enhance significantly their productivity and the quality of their agro-food products (Adriano 2015, Son 2016).

Moreover, the involvement of major agricultural industry players in providing training and agricultural inputs to the farmers and SMEs can stimulate the formation of SME clusters to serve as satellites to larger agro-processors, wholesalers, and retailers (Adriano 2015, Son 2016). This initiative could create a stronger linkage between the major industry players and farmers and/or farming SMEs, thereby addressing key challenges in the midstream level.
“In Asia, the GMS provides a good example of a cooperation program to develop the agriculture sector using the corridor approach, whereby agriculture is promoted around existing and planned infrastructure.”

Another strategy is to use the economic corridor development approach to develop AVCs. In general, economic corridors refer to linear agglomerations of economic activities and population within a territory or across countries. One advantage of an economic corridor is its ability to attract more investment and stimulate economic activities along the area or region in which the corridor is developed (Nogales 2014). Depending on the end goals, economic corridors can take different forms, from a simple development of physical infrastructure (usually transport) to more complex arrangements involving logistics, trade facilitation, and even coordination of noneconomic elements (e.g., policy frameworks and institutional capacity building). They can also be built focusing on targeted sectors such as agriculture, infrastructure (transport, energy and telecommunications), trade, environment, and tourism.

Applying the economic corridor development approach to AVCs implies the development of agriculture and agribusiness concentrated around major infrastructure investment. This involves improving physical infrastructure and functioning of markets to generate economies of scale in agriculture through investment in critical mass of agro-based industries in a specific area within a corridor. It also involves creating value networks among agribusiness sector players that will lead to more investments in the sector, and eventually, to more cross-border trade. Thus, by developing these “agro corridor” initiatives, the potential of countries to promote agricultural growth can be enhanced.

In Asia, the Greater Mekong Subregion (GMS) provides a good example of a cooperation program to develop the agriculture sector using the corridor approach, whereby agriculture is promoted around existing and planned infrastructure. The GMS economic corridors specialize in different AVCs according to their competitive strengths and advantages (see box). For example, the North–South Economic Corridor (linking the southeastern People’s Republic of China [PRC], the Lao People’s Democratic Republic, Myanmar, and Thailand) invests in agro-industry given the potential of this area in food processing and nonfood agro-based industries. Such advantage has served as an entry point for the development of contract farming in GMS agro-food value chains as in the case of biofuel crops production in the PRC, Myanmar, Thailand, and Viet Nam (Nogales 2014).

In Central Asia, economic corridors have been established since 1996 through the Central Asia Regional Economic Cooperation (CAREC) program. Although the main focus of CAREC corridors is on transport and infrastructure, the potential for these corridors to specialize in AVCs or subsectors can be high by leveraging physical infrastructure to rally investments in agriculture. Agricultural markets in Central Asia traditionally have been linked to Europe and the eastern PRC. Therefore, one strategy is to target agribusiness firms and producer organizations along the corridors connecting Europe and the PRC to further promote intra-CAREC agricultural trade.
Conclusion

One important reality in developing countries today is the emergence of agricultural supply chains. Many factors contribute to this changing context in agriculture, including the rapidly increasing regional production networks that link producers, processors, marketers, and distributors within the value chain. As globalization and integration forces expose the agriculture sector to more competition, it is crucial that countries are able to position the sector in terms of enhancing the efficiency of domestic production and facilitating entry into higher-value markets including global markets.

Developing an integrated AVC presents enormous opportunities, particularly for landlocked economies of the CAC region where cross-border production sharing and investments in targeted sectors, including agriculture, are beneficial. As earlier argued, value chains can enhance the competitiveness and productivity of the firms and other players within the chain, thus contributing to agriculture-driven economic growth at the end. But to achieve these results, the key constraints at the various stages of the chain (e.g., access to better inputs, improved technology, and infrastructure support) need to be effectively addressed.

Thus, for successful value chain development in countries in the CAC region, it is important that the right policies, regulations, and institutions are in place to support the participants and players in the value chain. These include, among others, the provision of access to credit, provision of adequate market infrastructure, support for technology and innovations, and greater opportunities for private sector engagement (ADB 2012).

Box: Greater Mekong Subregion Corridors’ Specialization in Agricultural Value Chains

In developing the economic corridors, one should take into consideration that each corridor has its own uniqueness due to the differences in strengths, limitations, factor endowments, and complementarities. Hence, each corridor should be developed based on the economic activities by which it enjoys a competitive advantage. This also applies to agricultural value chains that will be developed in each corridor.

Each of the Greater Mekong Subregion (GMS) corridors provides different opportunities. The North–South Economic Corridor has the potential to specialize in agriculture and agro-industry (e.g., food processing, nonfood agro-industry, and agricultural machinery and equipment). In the Southern Economic Corridor, there are opportunities for developing a commercial and industrial food crops’ production and processing center, and for producing cassava- and sugarcane-based ethanol. The East–West Economic Corridor has its own focus to enable agriculture-based processing activities such as “cross-border contract farming” in Savannakhet, Lao People’s Democratic Republic and rice processing in Thailand and Viet Nam.

The GMS corridors’ specialization in agricultural value chains is influenced by two factors. First is the expansion of biofuel production across the GMS area, particularly the People’s Republic of China, Myanmar, Thailand, and Viet Nam. Second is the advancement of contract farming for commercial and industrial crops in the border areas of Cambodia, the Lao People’s Democratic Republic, and Viet Nam.

Notes

1. Central Asia and the Caucasus countries are Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.
2. Value chain is a concept that was developed by Michael Porter (professor at the Harvard Business School) that explains a firm’s or organization’s operating activities in a specific industry for delivering a valuable product or service to the market.
3. Cluster development is the economic development of a geographical location where a concentration of interdependent enterprises and their affiliated institutions exist and are facing similar challenges and opportunities.
4. Grow Asia is a partnership platform catalyzed by the World Economic Forum in collaboration with the Association of Southeast Asia Nations (ASEAN) Secretariat in 2014.

References


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