

**Economic and Social Commission for Asia and the Pacific**

**IMPLICATIONS OF GLOBALIZATION FOR  
THE DEVELOPMENT OF AGRO-BASED INDUSTRIES  
IN DEVELOPING COUNTRIES OF  
THE ESCAP REGION: AN OVERVIEW**



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## **ESCAP works towards reducing poverty and managing globalization**

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## **INTRODUCTION**

### **A. Developing economies of Asia and the Pacific in a globalizing world**

Countries in the Asian and Pacific region display great diversity and uniqueness, which makes it difficult to define them as comprising one region. In past decades, the economies of the region have seen both ends of the spectrum with regard to economic performance. The first half of the 1990s was characterized by miraculous growth in Asia (an average of over 5 per cent annually compared with a global average of 3.5 per cent); the latter part of the decade was marked by the Asian financial crisis that shook the region and beyond (see tables 1 and 2).

The economies of the region can be grouped according to their different levels of development. The more advanced economies, such as Japan, the Republic of Korea, Taiwan Province of China and Singapore, are highly industrialized and rely largely on trade for their production and food security. Most of their industries produce high valued-added items, such as electronics, chemicals and biotechnology. Without exception, they have developed advanced competencies in food processing.

Some member countries of the Association of Southeast Asian Nations (ASEAN) have seen rapid industrialization and growth. Their industrialization was accelerated to a large extent in response to the growing demand from the more advanced economies of the Asian and Pacific region. Some more recent members of ASEAN, such as Viet Nam and Myanmar, are developing economies in transition that rely on agricultural production, a sector which employs a relatively large proportion of the population.

They have yet another striking feature in common. In most of these economies industrialization has evolved according to the traditional pattern, clustered around urban areas. However, the majority of the population in many of these developing countries and areas is still engaged in agriculture and agri-business such as food processing; textile industries also play a prominent role in these developing economies.

The least developed countries (LDCs) of the region share a common characteristic: more than 65 per cent (some up to 85 per cent) of their populations are employed in the agricultural sector.

China and India are major economic players influencing the region. One of the common features of these countries is that industrialization has been rural-based in contrast with the traditional pattern in which urbanization and industrialization go hand in hand. Hence, these countries are model examples when it comes to industrialization of rural areas. Similarly, the private sector of both countries consists mainly of small and medium-sized enterprises (SMEs). The limited size of the enterprises has enabled many such industries to remain in the countryside, close to raw material production sites.

**Table 1. Real GDP of selected economies in the Asian and Pacific region, 1982-1999**

	Average 1982- 1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Developing economies</b>	<b>5.2</b>	<b>5.8</b>	<b>6.0</b>	<b>6.1</b>	<b>5.3</b>	<b>3.7</b>	<b>1.1</b>	<b>4.1</b>	<b>5.1</b>
<b>South Asia</b>	<b>4.9</b>	<b>4.4</b>	<b>5.8</b>	<b>5.1</b>	<b>5.2</b>	<b>4.5</b>	<b>4.3</b>	<b>4.8</b>	<b>5.5</b>
Bangladesh	4.8	4.3	4.5	4.8	5.0	5.3	5.0	5.2	3.9
India	4.2	5.0	6.7	7.6	7.1	4.7	6.3	6.5	6.4
Nepal	4.1	3.8	8.2	3.5	5.3	5.0	3.0	3.9	6.0
Pakistan	7.3	1.9	3.9	4.1	4.9	1.0	2.6	4.3	5.1
Sri Lanka	4.3	6.9	5.6	5.5	3.8	6.4	4.7	4.3	6.0
<b>South-East Asia</b>	<b>6.4</b>	<b>7.7</b>	<b>8.2</b>	<b>8.0</b>	<b>7.6</b>	<b>4.9</b>	<b>-2.7</b>	<b>4.3</b>	<b>5.7</b>
Cambodia	4.8	7.5	7.0	7.7	7.0	1.0	1.0	4.0	5.0
Indonesia	7.2	7.3	7.5	8.2	8.0	4.5	-13.0	0.9	4.8
Lao People's Democratic Republic	7.0	5.9	8.1	7.1	6.9	6.5	5.0	5.0	5.7
Malaysia	8.9	9.9	9.2	9.8	10.0	7.3	-7.4	5.8	8.5
Philippines	0.3	2.1	4.4	4.8	5.8	5.2	-0.6	3.3	3.0
Singapore	6.5	12.7	11.4	8.0	7.5	8.4	0.4	5.9	9.9
Thailand	8.1	8.4	9.0	8.9	5.9	-1.7	-10.2	4.2	4.3
Viet Nam	8.6	8.1	8.8	9.5	9.3	8.2	3.5	4.2	5.5
<b>North-East Asia</b>	<b>4.6</b>	<b>5.7</b>	<b>7.0</b>	<b>7.1</b>	<b>5.8</b>	<b>5.9</b>	<b>0.8</b>	<b>5.9</b>	<b>7.2</b>
China	14.2	13.5	12.6	10.5	9.6	8.8	7.8	7.1	8.0
Hong Kong, China	6.3	6.1	5.4	3.9	4.5	5.0	-5.1	3.1	10.1
Mongolia	-9.5	-3.0	2.3	6.3	2.4	4.0	3.5	3.2	3.0
Republic of Korea	5.4	5.5	8.3	8.9	6.8	5.0	-6.7	10.9	8.8
Taiwan Province of China	6.8	6.3	6.5	6.0	5.7	6.8	4.7	5.4	6.0
<b>Pacific islands</b>	<b>5.0</b>	<b>5.3</b>	<b>3.0</b>	<b>4.0</b>	<b>2.5</b>	<b>-0.6</b>	<b>1.9</b>	<b>1.4</b>	<b>2.0</b>
Fiji	4.8	3.5	4.2	2.4	3.3	3.6	4.0	4.5	5.0
Papua New Guinea	11.8	16.6	1.9	-2.6	2.9	-2.4	1.4	3.2	-1.2
Samoa	4.1	1.7	-0.1	6.8	6.1	1.6	1.2	2.5	3.5
Solomon Islands	9.5	2.0	5.4	10.5	3.5	-2.3	0.5	-0.5	-1.0
Tonga	0.3	3.7	5.0	4.8	-1.4	-4.4	-1.5	..	1.5
Vanuatu	-0.7	4.5	1.3	2.3	0.4	0.6	6.0	-2.5	4.0

**Sources:** IMF, *World Economic Outlook 2003* (Washington, IMF, 2003); and United Nations, *Economic and Social Survey of Asia and the Pacific 2003* (United Nations publication, Sales No. E.03.II.F.11).

**Table 2. Real GDP of selected economies in the Asian and Pacific region, 2001-2005**

	2001	2002	2003	2004	2005
<b>Developing economies</b>	<b>3.2</b>	<b>5.1</b>	<b>5.4</b>	<b>5.7</b>	<b>5.5</b>
<b>South and South-West Asia</b>	<b>4.6</b>	<b>4.5</b>	<b>5.8</b>	<b>6.2</b>	<b>6.5</b>
Bangladesh	5.3	4.8	5.2	5.7	..
India	5.6	4.4	6.0	6.5	6.8
Iran (Islamic Republic of)	4.8	6.5	6.7	6.8	..
Nepal	4.9	0.8	2.5	3.5	..
Pakistan	2.5	3.6	4.5	5.0	5.5
Sri Lanka	-1.4	3.0	5.3	5.9	6.3
Turkey	-7.4	6.0	4.2	3.7	4.2
<b>South-East Asia</b>	<b>2.2</b>	<b>4.0</b>	<b>4.7</b>	<b>4.7</b>	<b>4.5</b>
Cambodia	5.5	4.5	6.4	6.0	6.5
Indonesia	3.3	3.2	4.1	4.4	4.3
Lao People's Democratic Republic	5.7	5.8	5.9	6.3	..
Malaysia	0.4	4.2	6.3	5.4	5.3
Myanmar	10.5	5.5	5.8	5.4	..
Philippines	3.2	4.6	4.6	4.9	5.5
Singapore	-2.4	2.2	4.2	4.9	5.0
Thailand	1.8	4.9	4.5	4.4	3.4
Viet Nam	6.8	7.0	7.5	7.5	7.5
<b>North-East Asia</b>	<b>3.3</b>	<b>5.7</b>	<b>5.6</b>	<b>6.0</b>	<b>5.7</b>
China	7.3	7.9	7.7	7.8	7.7
Hong Kong, China	0.6	1.7	2.5	4.5	3.9
Mongolia	1.1	3.9	5.0	..	..
Republic of Korea	3.0	6.1	5.3	5.4	4.3
Taiwan Province of China	-2.1	3.2	3.6	4.4	4.9
<b>Pacific islands</b>	<b>-0.8</b>	<b>1.1</b>	<b>3.2</b>	<b>3.0</b>	<b>2.4</b>
Cook Islands	-3.3	1.4	2.4	..	..
Fiji	4.3	4.4	5.7	3.6	3.7
Papua New Guinea	-3.4	-0.5	1.8	2.7	1.6
Samoa	6.45	1.1	6.0	5.0	5.0
Solomon Islands	-13.0	3.0	2.5	2.0	2.0
Tonga	3.0	-0.4	1.3	2.2	2.6
Vanuatu	-0.5	-0.3	0.5	0.9	1.3
<b>Developed economies</b>	<b>-0.1</b>	<b>-0.3</b>	<b>0.5</b>	<b>0.9</b>	<b>1.3</b>
Australia	2.7	3.3	3.2	3.6	3.8
Japan	-0.3	-0.6	0.3	0.7	1.1
New Zealand	2.5	3.8	2.6	2.8	3.1

*Source:* United Nations, *Economic and Social Survey of Asia and the Pacific 2003* (United Nations publication, Sales No. E.03.II.F.11).

Regardless of the level or different stages of the economies in the region, they are greatly influenced by the current trend of “globalization”. Conceptually, globalization is commonly perceived to be a multidimensional phenomenon comprising political, socio-economic and cultural dimensions, in which economic factors play a prominent role. In general, globalization can be described as the increased interdependence among nations for both consumption and production. The increased interdependence among nations stimulates increased movement of goods, labour, capital and information across borders. It is well recognized that there is a positive correlation between globalization of production and trade and a rising trade-GDP ratio.<sup>1</sup> The world economy commonly pursues managed integration through international agreements of the World Trade Organization (WTO) and through the implementation of synchronized national policies in member countries.

Besides the structural adjustments that national economies need to pursue, individual countries must foster, develop and create competitive advantage in order to reap the fruits of trade and globalization.

This paper indicates that, in the light of the current trend of globalization, the strategy to diversify into agro-industries may be a valuable option to create competitive advantage for countries in the Asian and Pacific region. In the next section of the paper, agro-based industries are defined before the main line of reasoning is developed as to why this strategy may be a logical response by the developing economies in the region to the current context of globalization.

## **B. Agro-based industries**

Agro-processing industries, or simply agro-based industries, can be described as industries that add value to agricultural raw materials, both food and non-food, through their processing into marketable, usable or edible products, while enhancing the income and profitability of the producers.<sup>2</sup>

As the above definition covers an extensive range of activities, agro-industries are usually grouped according to the main raw material being processed. Typical groupings are the food-processing industry, livestock industry, fisheries industry and forestry industry. As raw materials are often processed into products which in their turn serve as raw materials for yet other products, sometimes these second-stage raw materials similarly serve as the basis for classification. Typical examples are the textile industry, leather industry, dairy industry and meat industry, among others.

In the Asian and Pacific region, the majority of the population depends on agriculture for employment, especially in developing countries.<sup>3</sup> Furthermore, a growing population implies more mouths to feed; the increased demand for more food puts pressures on the availability of arable land, which then becomes more and more scarce. Moreover,

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<sup>1</sup> Bhavani P. Dhungana, “Strengthening the competitiveness of small and medium enterprises in the globalization process: prospects and challenges”, *Investment Promotion and Enterprise Development Bulletin for Asia and the Pacific*, No. 1 (ST/ESCAP/2259) (New York, United Nations, 2003).

<sup>2</sup> FAO Regional Office for Asia and the Pacific, “Policies and strategies for agro-industries in the Asia-Pacific region”, *RAP Bulletin*, No. 23 (1993).

<sup>3</sup> ADB, *Key Indicators 2003: Education for Global Participation* (Manila, 2003).

intensification of land use often causes deterioration of soil fertility. As a result of this pattern, intensifying agricultural production is not an option, unless the increase can be attained by increased efficiency, possibly through the use of new technologies. Hence, adding value to agricultural produce is one of the most obvious options for increasing the household income of families in rural areas. Rural-based agro-industries can prove to be of particular value in alleviating poverty in rural areas by raising incomes and creating employment, which would reduce migration from rural areas to urban centres. However, the role of agro-industries is important not just to alleviate rural poverty; many countries in the Asian and Pacific region rely on agro-industries to produce exports. Many countries earn foreign exchange through the export of agricultural and agro-industrial products,<sup>4</sup> and at the same time curb import demand.

### **C. Rationale and context for the promotion of agro-based industries**

Globalization is characterized by the integration of global markets, accelerated by the liberalization of trade, which has fuelled increased competition and efforts to enhance the competitiveness of industries and enterprises at the international, national and local levels.

Because most higher value-added agricultural products are characterized by a high ratio of transaction costs,<sup>5</sup> some prerequisites are required when a country attempts to enhance its competitiveness. These involve mostly the provision of infrastructure (i.e., the “hardware” aspect) in a country, such as roads and the supply of water and electricity. Government policies, regulations and procedures (i.e., the “software” aspect) should similarly be of a facilitating nature, since policy and regulatory reforms are usually a firm component of any shift towards promoting a competitive economic climate. Closely linked with these aspects, government and NGO support institutions need to be strengthened, and in some instances even created, in order to maintain competitive advantage among local industries. (Such institutions may be concerned with administration, training, research and development (R and D), technology transfer, facilitation of access to investment capital, provision and management of market information, etc.)

One of the major criticisms of globalization process has been the increased dependency on other nations that the process involved.<sup>6</sup> However, vulnerability associated with such dependency can be reduced by diversifying the economy. Industrial diversification spreads the risk among different sectors of the economy. To this end, national economic restructuring currently emphasizes diversification.

Within the agricultural sector, too, diversification can be used to protect against volatility. Even though agricultural diversification implies the production of diverse agricultural produce or crops, these days it is more broadly defined as “...a process accompanying economic growth, characterized by gradual movement out of subsistence food

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<sup>4</sup> Ibid.

<sup>5</sup> F. Goletti, *Agricultural Diversification and Rural Industrialization as a Strategy for Rural Income Growth and Poverty Reduction in Indochina and Myanmar*, MSS Discussion Paper No. 30, Markets and Structural Studies Division, International Food Policy Research Institute (Washington, June 1999).

<sup>6</sup> H. Daly, “Free trade: The perils of deregulation” and D. Morris “Free trade: The great destroyer” in J. Meander and E. Goldsmith, eds., *The Case against the Global Economy: And for a Turn toward the Local* (San Francisco, Sierra Club Books, 1996).

crops to a diversified market-oriented production system...”.<sup>7</sup> This suggests that, based on the same input, diversification in processing would result in diversified outputs. Hence, the process of agricultural diversification inherently includes industrial diversification.

Thus, in both the industrial and agricultural sectors, diversifying while simultaneously seeking competitive advantage can be identified as a strategy towards attaining sustainable development in an increasingly globalized environment. In fact, diversification can be expected to arise naturally in a highly competitive environment owing to the search for market by individual enterprises. Furthermore, at the enterprise level one method of raising competitiveness can be to enhance productivity. Improvements in the efficiency of production processes or improved management and planning can often lead to time- and cost-savings that will increase the competitiveness of enterprises. To this end new technologies need to be promoted and human resources developed and trained.

Another strategy is to “move up the value-chain”: raw materials comprise input, which, after processing, result in finished products. In most cases these “finished products” in their turn serve as raw materials for another round of processing; before the raw materials reach the “end customer”, they will have undergone many different rounds of processing. In each round the market price of the initial input is raised; hence, processing can be seen as adding value to products.

In general, we find that the agro-processing aimed at the ultimate consumers is the type of processing that adds the most value. Those activities are called processing at the “higher end of the value chain”, whereas the more simple and general processing is said to be at the “lower end of the value chain”. Developed countries are involved mostly in processing higher up in the value chain, while they leave the processing at the lower end of the value chain to other countries. In some cases, such a situation has occurred because of natural circumstances. (For example, Singapore, where agricultural land is extremely scarce, had to build competitive advantage in processing higher up in the value chain, whereas in other cases, such as Japan’s choice to develop competitive advantage in high-technology, this has been more of a strategic policy decision.

Many countries throughout the Asian and Pacific region are endowed with abundant natural resources, which can be sold as raw materials but also can serve as inputs for local processing to enhance the economic value of the produce. In such a movement along the value chain, there are however many issues to be taken into consideration, such as a clear understanding of what the consumers want, a clear understanding of the processing technology involved, the suitability of the local environment for the performance of such processing and the consequent effects on the natural environment.

Diversifying the economy into higher value-added agro-industries can be a strategic move for countries in the Asian and Pacific region, since it increases the income potential of the workers in agro-based industries in rural areas. Diversification is especially applicable to SMEs,<sup>8</sup> as the size of a firm does not pose a significant barrier to entry when diversification strategies are pursued. Many agro-industrial processes are appropriate for initiation at the household, or small enterprise, level; thus, the match of “small- and medium-sized agro-enterprises” could be very beneficial.

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<sup>7</sup> Goletti, op. cit.

<sup>8</sup> The promotion of and assistance to SMEs are commonly regarded as a suitable strategy for economic development and poverty alleviation. Furthermore, the majority of enterprises in Asia and the Pacific can be classified as micro, small or medium-sized.

## **I. IMPLICATIONS OF GLOBALIZATION FOR AGRO-BASED INDUSTRIES IN ASIA AND THE PACIFIC**

The main implications of globalization may be divided into several broad categories: the increased movement of goods, capital, information and labour, and the emergence of international production networks. The implications of these trends for agro-industries in the Asian and Pacific region are also examined briefly in this section of the paper.

### **A. Increased movement of goods: trade liberalization**

One of the core features of globalization is the liberalization of trade. Trade liberalization lifts protectionist measures and thus allows trade flows to increase. The most immediate consequence of increased trade flows may be related to an increase in competition. Even though trade liberalization can benefit economies in terms of raising GDP in the long run, producers may feel the consequential competition as a burden in the short run. It should be recognized that competition fuels a drive for efficiency and rationalization of production along the lines of competitive advantage. Therefore, there is a general consensus that the issue is not one of whether to open up and integrate with the global economy in a market-consistent manner, but when and how to do so.

In the Asian and Pacific region, virtually all countries have opened up or are in the process of opening up, their markets to trade, and pursue trade liberalization policies. An important example is China's accession to WTO in November 2001.

Yet, some raise the concern that developing countries are not able to reap the benefits of globalization if (a) such pursuits are executed in a hastily or untimely manner and (b) there is a lack of consideration regarding the specific conditions of the country in question. In such cases of improper planning and timing, negative impacts on national economies manifest themselves in increased volatility of the major macroeconomic variables.<sup>9</sup>

In search of risk reduction, some countries still resort to protectionist measures. A peculiar pattern can be discerned here: many countries' specific agricultural products are subjected to higher domestic protection in comparison with other products owing to their crucial role in sustaining human life.

Some argue that the agricultural sector needs to be protected to a certain extent, because of the unquantifiable value emanating from its "multifunctionality", i.e., its role in food security and in the development of the culture and ecological value of a nation.<sup>10</sup>

Protection of the agricultural sector is pursued by both developing and developed countries alike; in fact, it became one of the most difficult and controversial issues in the

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<sup>9</sup> For example, J.E. Stiglitz, *Development Policies in a World of Globalization 2001*, paper presented at the seminar "New International Trends for Economic Development" at the Social Development Bank, Rio de Janeiro, 12-13 September 2002.

<sup>10</sup> As defined in *Negotiating Proposal by Japan on WTO Agricultural Negotiations* (Tokyo, Ministry of Agriculture, Forestry and Fisheries, 2002) available from <[http://www.maff.go.jp/wto/wto\\_nihon\\_teian\\_e.htm](http://www.maff.go.jp/wto/wto_nihon_teian_e.htm)>.

WTO negotiations and agreements in Cancún, Mexico.<sup>11</sup> Nevertheless, most countries in the Asian and Pacific region are committed to liberalizing their markets; policies regarding trade are undergoing a process of liberalization and import tariff rates are gradually being lowered.

Globalization offers opportunities for agro-industries in several ways. Currently, the more developed countries in the region specializing in higher technologies import semi-industrial products and foodstuffs, which provides an opportunity for developing countries to produce and export goods and services to them.

Enterprises with economies of scale benefit from the expansion of resource markets, as they can engage in cross-border supply and production chains known as international production networks; they can set up extensive networks to provide input in a most economically efficient manner. Small enterprises in developing countries benefit from expanding output markets because they can act as suppliers in the aforementioned networks make technological advances and gain other benefits.

Expanding markets also augment the possibilities to diversify the agro-industrial sector. Producers need to not only consider the demand of the local market but also reduce risk by diversifying production based on the same resources that can be sold on local, national and international markets.

Some critics argue that by establishing production capacity that relies on demand from foreign markets a country becomes dependent on those markets and thus more vulnerable. However, the ability to serve a diverse base of customers would, to a certain extent, safeguard against possible instability. Focusing on the development and the promotion of agro-industries may once more be a relatively safe investment, because the markets for products such as foodstuffs and the necessities in life have relatively low demand elasticity and thus the products enjoy low price volatility.

## **B. Increased capital flows**

The rapid economic development of countries in Asia and the Pacific over the past decades has attracted huge amounts of foreign investment to the region. As information and communication technology (ICT) has enabled finance capital to become a tradable “goods”, it is not surprising that WTO maximized efforts to apply the “national treatment rule”<sup>12</sup> to the banking sector, as would be done for any other tradable goods.

The Asian financial crisis of 1997 discouraged foreign investment for a while, but the region has managed to build new confidence. As for the current recession, some countries have been able to avoid a downward economic spiral through high private domestic spending. However, the total volume of foreign direct investment (FDI) has declined and in general banks have been implementing a more conservative lending practice ever since the financial crisis. About half the global investment flows are directed towards Asia and the Pacific in spite of the declining trend of FDI at the global level.<sup>13</sup>

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<sup>11</sup> Not reaching an agreement on agriculture at the Fifth WTO Ministerial Conference at Cancún in September 2003 was one of the more disappointing developments in the negotiation process. It illustrates how defensive and uncompromising countries can be when it comes to trading essentials such as food.

<sup>12</sup> The national treatment rule requires that foreign products, services and companies be treated exactly the same as domestic ones, without discrimination.

<sup>13</sup> Multilateral Investment Guarantee Agency of the World Bank Group, *Benchmarking FDI Competitiveness in Asia*, Snapshot Asia Series of Regional Sector Analyses No. 1 (Washington, 2003).

Regarding the flows of FDI in the Asian and Pacific region, two interesting observations can be made. First, agro-based industries have attracted less FDI than sectors of higher risk and profitability; only a small proportion of total inflows are directed to the agro-based industries in the Asian and Pacific region. High value-added manufacturing and services sectors have attracted larger amounts of FDI. This illustrates one of the single most important considerations for investors: profitability. Second, most FDI in the Asian and Pacific region is directed towards the more advanced developing economies such as newly industrialized economies, South-East Asian economies and China and India, while the less developed countries of the region have had more difficulty in attracting FDI. This is related to the relatively difficult, expensive or time-consuming procedures and regulations in those countries. Their weak market structure, poor infrastructure facilities, scarcity of skilled labour and turbulence in the socio-political environment, among others, have constituted the main averting/diverting factors for FDI.

Developing countries in the Asian and Pacific region have introduced various measures for the promotion of FDI. Some of these measures are the provision of infrastructure facilities (including land), the easing of bureaucratic procedures, permission to repatriate profits on investments and the provision of one-stop services. Other incentives that countries offer are financial packages such as tax holidays for a fixed period of time, discriminatory corporate tax concessions, preferential duty on imports of machines and equipment and foreign exchange facilities. A recent World Bank study (2003) put several recommendations forward to attract FDI; they include strengthening the legal regulatory system (to reduce statutory requirements, to limit smuggling and other criminal activities, etc.), improving government procedures in terms of transparency and intergovernment-office cooperation and promoting information technology and the education of their workforce.<sup>14</sup>

In the Asian and Pacific region, agro-based industries in rural areas have attracted less attention from institutional investors and venture capitalists owing to their relatively low productivity and the opportunities they offer for relatively lucrative investment in other sectors such as high technology. In many societies in the region, rural communities finance agro-industries of relatively smaller size through community savings groups or the private investments made by the local population (in many cases remittances from family members working in urban areas). The prospects for investment in Asia's rural-based agro-industries look good in view of the importance of SME promotion and development perceived by policy makers as well as the increased access to SME financing schemes, such as microcredit and other rural banking and financing mechanisms.

### **C. Increased flow of knowledge and information**

The rapid advancements made in ICT are among the developments that fuelled global integration. ICT innovations and applications such as e-mail, satellite connections, fibre-optic cables, data compression and the commercialization of their use significantly boosted the efficiency of traditional industries as well as those of the financial and services sectors. Moreover, they have opened up a whole new area of services and products for further development.

Accelerated flows of information enable enterprises to respond faster to market opportunities. As access to information is accelerated, decisions can be made based on more

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<sup>14</sup> Ibid.

information thus reducing the risk involved with these decisions. Owing to its ability to reduce risk, information has become a tradable good in itself and a thriving, lucrative service industry has evolved around it. For the agro-industry sector, ICT has encouraged the establishment of databases with useful information regarding technologies, R and D, markets, among others.<sup>15</sup> Information is more efficiently stored and managed while its accessibility is enhanced by simultaneous developments in communications technology. The latter has further facilitated the establishment of networks around the globe, among them the developers of new technologies in agro-industries.

However, another technological development has had a great impact specifically on agro-industries. In the current age of knowledge-based economies, it is understandable that many societies with large agricultural sectors, as well as developed countries focusing on high technology, are pursuing advances in biotechnology. This high-end agro-industry is a rapidly growing field in the Asian and Pacific region, as many Governments regard the development of biotechnology as the key strategic area in their policies on agriculture, science and technology.

Biotechnology can be defined as the application of science and engineering to the direct or indirect use of living organisms, or parts or products of living organisms, in their natural or modified forms. Although biotechnology has drawn a great deal of attention because of cloning and the ethical complexities it involves, it also concerns many applications such as the genetic modification of crops to increase disease resistance or to increase the yield per plant. Biotechnology also offers solutions for the diagnosis and control of disease in crops and livestock, the utilization of crop residues and animal waste, and so on.

These applications of biotechnology can make an immense difference in the productivity and competitiveness of agro-industries in the region. The competition gap that this new technology may create could have a serious effect on agro-industries. National legislation and international agreements concerning biotechnology are only at the preliminary stages of development. However, under the WTO agreement on trade-related aspects of intellectual property rights (TRIPS), the intellectual property rights of biotechnological inventions can be governed to some extent.

#### **D. Increased movement of labour**

The integration of production processes has also resulted in increased mobility of labour, especially in the light of the technology transfer required for specific production processes. However, in the agro-industrial sector the movement of human resources is not so much international as it is from rural to urban areas of a country.

The increased exposure of people to different countries and cultures has resulted in new eating habits besides the traditional ones. This requires a diversified input of agricultural raw materials. Examples are the import of grain into the Asian and Pacific region to meet the demand for bakery items, and the import by European countries of Asian spices to satisfy new tastes. The increased mobility of labour has had a very positive impact: as travelers acquire a taste for foreign foods, the opportunity for market creation and expansion is great for agro-based industries in particular.

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<sup>15</sup> For example, the databases of the International Service for National Agricultural Research, the SEAMEO Regional Center for Graduate Study and Research in Agriculture, or the Asian and the Pacific Centre for Transfer of Technology.

## **E. International production networks**

In most cases, within international production networks, a mutually beneficial deal is struck. An environment of trust is required as transnational corporations (TNCs) provide technical and market information and labour support, while the suppliers, in turn, invest in equipment and specialization according to TNCs' demands.<sup>16</sup> From either side, such investments would not be worthwhile if the cooperation was not for a considerable duration. Hence, many countries regard their entry into international production networks as a great value in the development of their national economies.

Some are concerned about the disruption of the global supply chain. The size of TNCs gives them a dominant position in trade; even more serious is the situation in international production networks where TNCs simply internalize the supply chain as part of their global operations. Hence, consideration should be given to how the current trend of emerging international production networks could benefit SMEs and their entrepreneurs. In this regard many Governments have tried to facilitate ways to develop linkages between these networks and local SMEs.

Producers in the agricultural sector usually represent the supply enterprises in such networks; however, the further they move up the value chain, the more diverse the input for their products becomes. Hence, they may end up with the demand-side of the relationship.

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<sup>16</sup> G. Abonyi, "The relationship between international production networks and local clusters: The changing 'model' of development in Asia", paper presented at the ESCAP Workshop on the Emerging Economic Map of Asia: Regional Restructuring, Asian Integration and Sustainable Development", Bangkok, 1-2 August 2001.

## **II. CONCLUSIONS AND RECOMMENDATIONS ON CAPACITY-BUILDING AREAS**

The selection of industries on which to focus development primarily depends upon the resource endowment of the country concerned. Globalization has permitted countries to reach beyond the limits of their natural boundaries in order to obtain these resources. However, to draw resources from abroad will always have a price tag: the question will be whether to be paid in financial terms or through the transfer of technology or otherwise. This is why many developing countries do not have many opportunities to draw resources from anywhere but from their own natural resource endowments; in this regard, many countries in the ESCAP region may be well suited to the development and the promotion of agro-based industries.

Agro-industries are a simultaneous remedy for alleviating rural poverty by bringing rural-urban migration flows closer towards an equilibrium through the employment created and the development of rural areas.

However, the existing environment for the development of agro-industries in developing countries is not favourable. In some countries basic infrastructure requirements such as roads, electricity and water are not in place; in other countries the lack of legal and regulatory frameworks pose a constraint. In still other cases it simply may not be possible to mobilize sufficient financial or technical resources. In each country there are many areas for further improvement to facilitate the development of agro-industries into a diversified and competitive sector.

In sum, many of the capacity-building issues discussed below have a strong interrelationship; thus, their governing strategy in this age of rapid globalization should encompass all the areas enumerated below.

### **A. Policy capacity-building**

The majority of the developing countries in the Asian and Pacific region have introduced liberal economic policies in the 1980s and early 1990s and by now almost all have liberalized their economies to a greater extent. However, the degree of openness varies from country to country. Even though liberal economic policies are conducive to reaping the benefits of globalization, the liberalization process should be synchronized with the capacity-building process of a country.

#### **1. General**

In countries where agro-based industries play an important role, it is useful to refer to agro-based industries as a separate group of industries. This can enhance the ease with which their development can be considered in different policy areas in the planning stage. In the stage of policy formulation agro-industries can be targeted easily by the different national policies without ambiguity in its definition.

Many Governments have already mentioned the promotion of agro-industries in their development policy plans. In some countries such as China, where most industrialization has been of a rural nature in contrast to the classical patterns of industrialization, no specific

mention is made of agro-industries since they are so well integrated within the industrialization process as a whole. Similarly, in countries such as the Republic of Korea and Japan, there is no mention of agro-based industries, although for different reasons. Diversifying into agro-processing would be a move towards activities lower on the value chain than their high value-added industries. They may use the promotion of agro-industries, however, as an incentive to reduce rural-urban disparities and to protect rural lifestyles. ASEAN members and other countries which are relatively dependent upon a largely rural workforce, all mention the promotion of agro-industries in their trade, investment, industrial and agricultural policies.

## **2. Science and technology policies**

It is generally advisable to promote the development or adaptation of technologies required by industry, including agro-industry. Restrictions on importing and exporting technological machinery and equipment should be minimized, as they have a harmful effect on the development and spread of technology within a country.

Until now, one of the most prominent comparative advantages of countries in the Asian and Pacific region was their low labour and production costs. However, this is commonly recognized as not being a sustainable advantage. Therefore, such countries should consider agro-based industries as the vehicle of their development by diversifying into products higher up in the value chain. Competitive advantage should shift from low labour costs to specialization in high value-added agro-processing activities.

Policies that encourage such a shift can be, for example, science and technology policies that encourage R and D in agro-industrial processing, or biotechnology application research. With regard to the latter, many countries wish to develop competencies in biotechnology, since it has the potential to increase agro-industrial output extensively. Hence, we often see science and technology policies influenced by agro-industries.

## **3. Environment policy**

Many developing countries in the region have comparative advantages in agro-based industries owing to their abundant natural resources. Simply depleting natural resources would not be a sustainable means of enhancing competitiveness. However, environmental policies that pursue soil protection by promoting the transfer of techniques such as crop-rotation, dual-cropping, intercropping, reforestation and biodiversity preservation measures, all protect the natural environment<sup>17</sup> and simultaneously contribute to the diversification of agro-based industries.

### **B. Institutional capacity-building**

Each country would benefit from identifying the gap between the needs of the rural population with regard to developing competencies in agro-industries and what the existing institutions offer them. The gap should be filled by restructuring or expanding existing institutions and strengthening them as needed. This requires extensive planning and investment, especially in human resources development and training, and model examples

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<sup>17</sup> Goletti, op. cit., indicates that sometimes in rural areas ecological hazards or deterioration trigger a drive towards diversifying agricultural activities.

from various countries should be reviewed in order to gain inspiration from the systems they use. However, priority should be given to incorporate the demand for services, as defined by the local population. As a prerequisite, a strong legal/regulatory governing institution should also be provided to enforce and to maintain law and order.

## **1. Support services institutions**

Support services should be provided to the rural private sector. Four main branches of assistance will be described in the next subsection on private sector development. While doing so, the needs of the rural localities should be reflected, providing demand-driven services to back up the fostering of agro-industries at the local level.

The support service institutions should be empowered by equipping them with space (laboratory/workshop), specialized and well-trained staff, communications equipment, computers, etc., and by decentralizing to a certain degree direct authority to local institutions, so that they could be quick and flexible in responding to local needs in the agro-industries.

Because the service institutions or extension services should work on a demand-driven basis, monitoring and evaluation dimensions should be incorporated into their ongoing activities so that the service continuously provided could be synchronized with the demand of the local population and matched with their state of development. With respect to fully functioning support service-providing institutions, outreach is a matter of great concern. In some cases the institutions are centred in urban areas, which may be quite accessible but still far away for many who are most in need of their services. In such instances, the institutions do not reach those whom they are intended to serve.

One option is to upgrade agricultural extension services, which used to promote the transfer of agricultural technology so that they would encompass a much wider scope of services. Besides technology, extension services could be used to build capacity among the rural private sector in terms of management, problem-solving and entrepreneurship (entrepreneurial spirit will be needed to initiate the diversification from primary agricultural products). Extension may further be used as a gateway for market information, contact with financial institutions, etc. In such a manner, the traditional role of extension services is being broadened to become a holistic, integrated, rural development function. This actually represents a shift which agricultural extension is going through in many countries already.<sup>18</sup> In the majority of countries in the Asian and Pacific region though, sparse financial resources are allocated to agricultural extension; often the result is an incompetent or poorly motivated workforce.

An alternative to transforming extension services is to establish resource centres in rural areas, where the rural private sector can come for advice, training or technology transfer, or to use communications equipment and computers. If countries recognize and agree on the potential of rural industrialization and diversification for a wide range of agro-based products, they will need to invest in building sound institutions to regulate and administer (agro-industrial) enterprises and to provide facilitation to the rural private sector. The competency and capacity of the human resources employed at these institutions are a prerequisite to these support institutions.

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<sup>18</sup> M. Kalim Qamar, "Global trends in agricultural extension: Challenges facing Asia and the Pacific region", keynote paper presented at the FAO Regional Expert Consultation on Agricultural Extension, Research-Extension-Farmer Interface and Technology Transfer, Bangkok, 16-18 July 2002.

## **2. Financial institutions**

Financial institutions should be willing and able to support agro-industries, or the government agencies concerned should provide strong incentives for the existing financial institutions for financing agro-based industries. Many examples of micro- and rural credit extension have been well documented and can serve as lessons when drafting a national plan.

### **C. Private sector development and facilitation**

In market economies the main players in the economic arena are the enterprises constituting the private sector. The public sector mainly facilitates the functioning of the market by providing a reliable framework in which economic activity can take place.

Many countries with economies in transition in the Asian and Pacific region have recently made the transition from a centrally planned to a market economy, while others have adopted a hybrid type of market economy with ample room for government intervention.

#### **1. Community-building in rural areas**

For rural economies the thinly spread nature of resources is often an issue when it comes to approaching global markets or even national markets. Attaining economies of scale is easier when drawing from a pool of resources. Local communities may organize themselves and initiate agro-industrial initiatives on a community basis, which decreases individual risk and increases the chance of being able to stand increased competition. Possible structures and administrative procedures for community-building can be offered or initiated by the support institutions to facilitate and accelerate the process and to safeguard its stability in the early stages.

#### **2. Entrepreneurship development**

From a national perspective, policy can have a great impact on motivating the private sector. Investment and industrial policies, which traditionally provide financial incentives, broadly direct the course of development for a nation.<sup>19</sup> Often it is the entrepreneurial layers of society that will react to these policy initiatives. In general, entrepreneurs can be characterized by their creativity and proactive approach; they do not need much facilitation as long as the basic infrastructure (institutional and physical) is provided. In many developing countries though, this layer is not so extensive, and the majority need more assistance. In principle, there are four main classifications for the assistance that is to be provided to the local private sector, if the aim is to enable them to create and operate enterprises (including agro-enterprises), namely, (a) access to financial resources; (b) training in enterprise management and production/technical skills; (c) access to information and networks; and (d) provision of physical facilities.

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<sup>19</sup> These can be incentives such as tax holidays, concessionary credit and tax rebates.

### **3. International production networks**

Private sector capacity-building can also be pursued by initiating support from service institutions. They can provide initial contacts or information/databases to find partners for establishing production linkages between domestic agro-based industries and food industries of developed countries (engagement in international production networks).

#### **D. Investment promotion for agro-based industries**

Investment and capital formation are fundamental to the growth of the industrial sector, including the agro-industrial sector. Various countries of the Asian and Pacific region have introduced different measures to mobilize savings and promote the participation of the private sector in industrial development through investment opportunities.

##### **1. Domestic investment**

With regard to financial services, many microcredit programmes and agricultural banks are currently available to borrowers in rural areas. Every country has its own failure and success stories concerning its experience in providing credit to rural borrowers. To promote domestic investment in agro-based industries, social mobilization programmes (savings groups, finance cooperatives, etc.) should be considered for generating and mobilizing local savings for investment capital at the community level. Furthermore, it may be advisable to invest in the capacity-building of rural communities in terms of human resources and access to services, so that they could eventually compete in the global economy. In this respect, it would also be advisable to coordinate rural-urban production linkages.

##### **2. Foreign direct investment**

FDI can be attracted by providing (a) a climate conducive to economic development and regulations and (b) procedures which are favourable to and convenient for foreign investors. The global growth of GDP in some countries has brought with it widening inequality of FDI distribution; in this regard rural populations usually find themselves at the unfavourable end of the spectrum. Hence, investment policies should be aimed at a more equal distribution by promoting an equal share of investment in rural areas. The profitability of investments in rural areas should be complemented by supplementary non-financial investments. The boards of investment and investment promotion agencies at the national level can, for example, promote agro-industries by making obvious their local market and export potential. Governments can further assist in the quality testing of agricultural products and International Organization for Standardization (ISO) certification facilitation, which increases export competitiveness. The Government also can turn to development aid in the form of technical assistance for the development and promotion of agro-based industries.

Finally, opportunities should be explored for the promotion of joint ventures or production linkages between the domestic agro-based industries of developing countries and the food industries of developed countries.

## **E. Technological capacity-building in rural areas**

Technology is regarded as one of the crucial means to improve the competitiveness of industries. In micro- or small-scale agro-industries the introduction of some minor technological changes can make a big difference. For instance, a simple shift from manual fruit pulping to using blenders can enhance productivity and quality in terms of hygiene.

Most technological applications for agro-industries require electricity and water, especially the ones which are appropriate for production on a medium or large scale. Furthermore, some knowledge about the product and the entire production process as well as about the use of machinery and maintenance is required.

### **1. Appropriate technology**

Technologies used in developing countries are usually imported or adapted from technologies from abroad. Technologies should be selected on the basis of their appropriateness for the local conditions, or they should be adapted to them. However, especially in agro-industries, there is usually a valuable base of local knowledge about processing of the primary agricultural products, which are produced in the area. It is essential that such indigenous knowledge not be lost with the importation of new technologies.

Foreign and local technologies should be scrutinized objectively to see how they can be blended into a new “appropriate technology”, utilizing the best of both worlds. Not only should advanced technologies be adapted to local needs, but also the potential of local technologies should be upgraded.

### **2. Research and development**

It would be useful to have linkages between rural industries and institutions with the capacity to undertake R and D, such as universities, laboratories and business incubators. R and D output ought to be closely linked with industrial requirements in order to develop appropriate technologies for application in agro-industries, taking into account the latest international developments in technology, as well as the indigenous knowledge available in the locality concerned.

Incentives for private sector R and D activities may also be adopted in view of the objectives of commercialization and market considerations.

### **3. Human resources development**

In the knowledge-based economy, human resources are the major determinant of competitiveness. The more developed and educated is the human resource base of a country, the easier it is for the respective country to adopt high technologies with the greatest value added.

In many countries access to education is still a problem. Where the quality of education is poor and access is limited, these factors comprise the primary obstacle to the development of a skilled labour force, especially in the rural areas where the majority of agro-based industries are located. Educational policies aimed at promoting the concentration of educational activities in rural areas may be necessary to solve such an imbalance.

As educational standards are usually lower in rural areas and a greater proportion of enrolment in the developing countries is in the social sciences rather than in technology-related subjects, training efforts may take more time and energy than they would in urban areas.<sup>20</sup>

If agro-industries are to be promoted, so should education be upgraded for the professions needed by agro-industries. In general, a traditional method to promote a certain field of study in general is the provision of scholarships or job guarantees for technology students. A method to gear the students' perspective more towards rural economic development would be to incorporate some entrepreneurship development courses in the curriculum, so that students would be better able to start a business by themselves after completion of their studies.

Finally, tailor-made training packages may be one of the most pragmatic solutions to train the existing workforce pool. Training specifically for industry or even agro-processing should be given to upgrade the competency and productivity of the labour force in the rural areas of the developing economies of the region.

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<sup>20</sup> UNESCO, *EFA Global Monitoring report 2003/4* (Paris, 2003) and UNESCO, *Global Education Digest 2003*, UNESCO Institute for Statistics (Montreal, 2003).