

Agriculture in North Cyprus

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I. Introduction

Historical experience showed that developed countries, especially Western countries, directed their economic development transiting from agriculture to industrialization and service society. The validity of comparative advantage for developing countries weakens as time passes as they follow developed countries. But the model of Lewis (1954) is a theory of development emphasizing on rapid industrial growth with an agricultural sector fueling this industrial expansion by means of its cheap food and surplus labor. Today development economists are less sanguine about the desirability of playing such heavy emphasis on rapid industrialization (Todaro, 1997). They argued that the role of the agricultural sector and the rural economy must be dynamic and leading elements rather than playing a passive and supporting role in economic development process, at least for the vast majority of Third World Countries. However, traditionally, it has been viewed as passive supportive. Gunnar Myrdal, Nobel Laureate in Economics, argued that it is in the agricultural sector that the battle for long-term economic growth will be won or lost.

There has been a rapid growth of agricultural sector since the eighteenth century. This has been spurred by technological and biological improvements, which have resulted in even higher levels of labor and land productivity. Estimation about agricultural population, total agricultural production and per capita agricultural production for More Developed Countries (MDCs) and Less Developed Countries (LDCs) for the years of 1960, 1980 and 2000 are made and also presented in Todaro (1997) as shown in Table 1.

The table as also indicated by Todaro (1997) shows that agricultural population increases in LDCs whereas it decreases in MDCs. Additionally, per capita agricultural production increases in MDCs at a faster rate than LDCs. Total number of people lived in rural areas was over 3.1 billion in 1995 and estimates indicated this figure to be almost 3.4 billion by the year of 2000. Traditional neoclassical theory predicts that poor rural areas should grow proportionally faster than rich areas. On the other hand, a preponderance of small family farms should enhance growth as interpreted in the academic literature and popular press (Deller et al., 2003).

Table I. Agriculture Population and Production in MDCs and LDCs, 1960-200

	1960		1980		2000	
	MDC	LDC	MDC	LDC	MDC	LDC
Agricultural Population (million)	115	850	75	1230	50	1480
Total Agricultural Production (billion \$)	78	43	125	77	186	135

Source: See Todaro (1997).

When world agriculture is evaluated, it is observed that it comprises two types of farming. First is the highly efficient agriculture of developed countries, where substantial productive capacity and high output for worker permit a very small number of farmers to feed entire nations. Second is the inefficient and low productive agriculture of developing countries, where in many instances the agricultural sector can barely sustain the farm population, let alone the burgeoning urban population, even at a minimum level of subsistence (World Resources Institute, 1994). Table I shows that an immense gap between the two exists. The first row gives population in rural areas in MDCs and LDCs. The last row gives this immense gap between MDCs and LDCs, where per capita agricultural production in MDCs was 680 US\$, 1,660 US \$ and 3,720 US \$ respectively in 1960, 1980 and 2000 whereas it is only 52 US \$, 63 US \$ and 91 US \$ in LDCs. In most of the LDCs, the government usually concentrate on expanding industrial sector and neglect the agricultural sector. This generates many problems like the lack of foreign exchange and food supply.

Developing countries need to be self sufficient in agricultural and food production, export these to others to earn foreign exchange, and import non-agricultural goods and services as comparative advantage theory stated. However, their economic problems like being in heavy debt stock and structural inefficiencies make them dependent on others. On the other hand, terms of trade are another important factor not only for developing countries but also small economies. As Kaneko (2000) suggests conventional static trade theory demonstrates that an improvement in the terms of trade raises the "absolute level" of national income in small open economies. But Kaneko (2000) also suggests that this framework cannot be used to investigate the effects of the terms of trade on the growth rate. Thus, in contrast, using a dynamic trade model of a small open economy, he investigates the relationship between an improvement in the terms of trade and the "growth rate" of national income. He finds that it is the trade pattern that determines the effect of the terms of trade on the growth rate of national income. He also concluded that the terms of trade can clearly affect growth when a country specializes mainly in consumption commodities; that is, the higher the terms of trade are, the higher the growth rate is, and vice versa. He suggest that if a country specializes in capital commodities, the terms of trade do not affect growth.

World agricultural markets are significantly distorted by a wide range of domestic policies, including protectionist measures which have restricted the export performance of many developing countries. The contribution of the agricultural sector provides incremental markets for new products manufactured in the industrial sector. Additionally, it also contributes to increasing the supply of food and new material to other sectors, provides tax revenue to the government that

creates investable surplus to other expending sectors and provides foreign exchange. The increasing productivity of agricultural sector provides resources to other sectors. If the resources are used productively, the effect can be accelerated. The new resources refer to supply of labor, new material and food. The increased production of food is not only to feed the labor in modern sector and also to feed the high growth rate of population. On the other hand, as the productivity of agricultural sector increases, excess products can be exported to earn more foreign exchange. The earning of foreign exchange can provide the government to make investment for modern sector.

The aim of this study is to describe the historical background of agriculture and problems faced in this sector in North Cyprus. Numerical indicators are given in the study regarding the development agriculture in the island. Section 2 examines the structure and development of the sector; section 3 discusses problems and major threatens of the sector; and section 4 concludes the study by making some policy implications.

2. An Examination of Agricultural Sector in North Cyprus

North Cyprus is a typical small island in the Mediterranean sea having a population over 215,000 people, 3,355 km² land area and 5,949 US \$ per capita income (SPO, 2003), limited natural resources and workforce efficiency. It simply possesses the typical characteristics of a small island economy. The statistical data with North Cyprus has been recorded since 1975 after which Turkish Cypriots started to establish their own economic and political regulation. But, it is an extremely closed state that can not develop any political and economic relations with countries other than Turkey because of non-recognition and embargoes.

In North Cyprus, 60.2% of total population live in villages and rural areas, and 39.8% live in the town centers. Literacy rate is 99% and the ratio of university graduates over population is around 50%. The work force was 45.8% of total population in 2003, of which, 18.8% belongs to public services, 14.5% to agriculture, 9.3% to industry, 19.7% to construction and 11.2% to trade and tourism sectors (SPO, 2003).

North Cyprus has faced an increasing drought problem for the years, the pools and the natural resources were dried over time. The situation adversely affected agricultural sector and therefore citrus production, which is a very important and a characteristic product of the country. The effectiveness and the share of agricultural production in GDP have decreased significantly over the years. On the other hand, the development of industrial sector gained more importance. The industrial sector in North Cyprus is mainly comprised of clothing, textile and freeze foods. The share of agricultural production and industrial production in GDP was 10.6% and 11.6% respectively in 2003. Table 2 gives real growth rates in important sectors of North Cyprus in the selected years. As can be seen from the table, there are significant falls in growth rates of almost all sectors over the years.

Despite of being a small island in the Mediterranean Sea, Turkish Cypriot people based their means of subsistence on agriculture. But it is at a decreasing trend over the years. The political

isolation of North Cyprus brought many burdens to this sector as in other fields, too. Therefore, as a closed economy, North Cyprus cannot improve its production in agriculture and industry. Figure 1 shows the graphical trend of these sectors in GDP.

Table 2. Real Growth Rates in the Sectors of North Cyprus

Sectors	1980	1985	1990	1995
1. Agriculture	3,5	16,8	-9,8	2,4
2. Industry	49,6	17,4	3,8	5,1
3. Construction	-21,0	-2,4	1,0	-21,5
4. Trade - Tourism	-4,9	6,5	10,5	10,7
5. Transportation - Communication	-10,3	-2,2	5,0	6,6
6. Financial Institutions	3,8	7,9	7,8	13,2
7. Ownership of Dwellings	-11,0	4,7	2,1	1,9
8. Business and Personal Services	8,2	4,5	10,0	2,1
9. Public Services	-0,7	9,3	4,1	-2,2
10. Import Duties	-41,8	-2,4	57,5	19,9
11. GDP	0,7	7,8	6,4	3,0
12. Net Factor Income from Abroad	19,2	-6,8	-52,2	-21,3
GNP	0,9	7,5	5,7	2,6

Source: SPO (2003).

Most of the consumption and intermediate goods are imported from other countries. This causes production costs and prices to bid up in the country. Most of the imported goods are consumption goods. Around 44% of all imported goods belong to final consumption goods; the rest belongs to intermediate (33.3%) and investment goods (22.9%) (SPO, 2003). The share of final goods in total imports rises more than intermediate and investment goods as time passes. This indicates that North Cyprus is moving from a production based economy towards consumption and import based economy. Freeze foods including vegetables and fishes produced in the country are limited and meet basically domestic market..

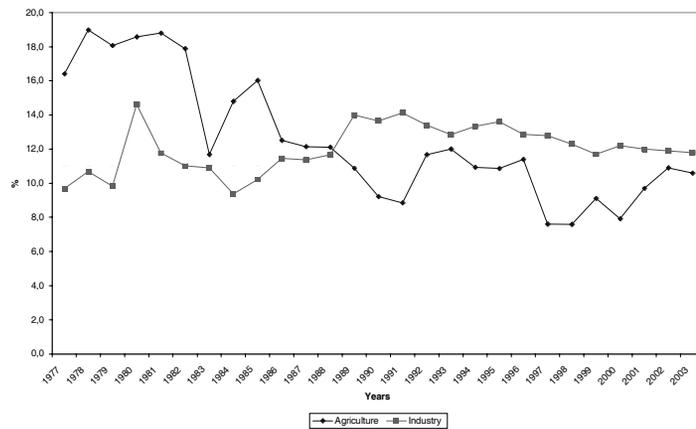


Figure 1. The Share of Agriculture and Industry in GDP of North Cyprus (%)

Parallel to a falling trend in agricultural and industrial sectors, exports of North Cyprus are at a decreasing trend, too. The average annual growth of total exports and imports of North Cyprus is 1.0% and 3.4% respectively during 1977 - 2003 period. The exports of agricultural products to other countries have declined by 0.06 % per annum on average during the same period.

The agricultural land area constitutes 56.7% of total land area in North Cyprus of which 63.1% is actively used for agricultural production and 8.0% of active agricultural production area belongs to watery agriculture.

The contribution of agricultural production to GDP has risen from 34.02 million US \$ in 1977 to 118.7 million US \$ in 2003 at current prices. The share of agricultural products in total exports was 41.1% in 2003 and the share of agricultural employment was 14.5% of total employment in the same year. The share of agricultural production in GDP was 10.6% in 2003 where it was 16.4% in 1977.

The basic sub-sectors of agricultural production are land based foods, animal husbandry, forestry, and watery products. The watery agricultural area is of fruits pouring out leafs, grapes and various vegetables. The rest is used in traditional dried cereals' production. Most of the agricultural exports are of watery agricultural products.

Animal husbandry is widespread in the country that constituted around 36.8% of total agricultural production and 3.9% of GDP in 2003. The cattle, goat and chickens are important products of this sector. Animal husbandry generally meets the domestic demand and surpluses of especially alive lambs and kids and milk products are exported to foreign countries.

Fishing is another sub-sector of agriculture that contributes to GDP very few. But the demand for fishing products raises the importance of this sector in the country. The sector suffers seriously from unconscious fishing for many years. The shortage in fishing is compensated from outside especially from Turkey. The share of fish production in GDP was 0.5% in 2003.

The drought problem affected forestry negatively as in other sectors. The share of forestry production in GDP was 0.1% in 2003. Fires in forestry experienced by North Cyprus were large enough significantly to reduce the forestry land area, which were mainly caused by extreme hot climates faced in summer times.

Among the important exported agricultural products are citrus, potatoes and lived animals. Parallel to a fall in citrus products, their exports are also at a decreasing trend. Oranges, lemons and grape fruits are important citrus products in North Cyprus. The share of exports of total citrus products in total volume was 65.7% in 1977 and 35.1% in 2003. Table 3 shows the shares of agricultural exports between 1977 and 2003.

The potatoes are important products in agricultural exports of North Cyprus. Its share in total exports was 7.5% in 1977 and 0.8% in 2003. As citrus products and grapes, potatoes even possess the characteristics of Cyprus being long and growing up in red soils.

Lived Animals are few in agricultural exports. Among them are lambs and kids. Despite of being a small island, animal husbandry is essential for the means of subsistence for many people in rural areas of North Cyprus. The lack of enough feeds and rising feed prices creates many problems for producers both in production and exporting. This caused animal husbandry to lose its popularity and its production over the years. Statistics of animal husbandry exports have been recorded since 1980. The records before this date were so small in amounts that it was not worth of recording. The exports of animal husbandry constituted 0.5% of total exports in 1977. This rate was 8.1% in 1983, 0.3% in 1997 and almost 0.0% in 2003 in which there were only a few exports of animal husbandry.

Table 3. Share of Agricultural Exports in Total Volume (%)

Years	Citrus	Potatoes	Animal Husbandry	Other	Share of Total Agriculture
1977	65.7	7.5	-	4.2	77.4
1978	71.4	6.8	-	5.2	83.4
1979	68.2	7.2	-	4.5	79.9
1980	69.9	6.3	0.5	4.9	81.6
1981	65.9	4.3	3.3	7.3	80.8
1982	63.8	3.3	5.1	8.3	80.5
1983	58.5	5.4	8.1	4.9	76.9
1984	51.0	4.9	7.5	5.1	68.5
1985	64.6	5.6	5.0	2.4	77.6
1986	54.8	7.3	4.4	4.4	70.9
1987	40.8	4.2	3.3	8.2	56.5
1988	45.6	4.6	1.5	4.4	56.1
1989	39.1	3.1	0.5	12.0	54.7
1990	37.4	3.7	0.4	4.0	45.5
1991	41.1	4.6	0.2	2.9	51.4
1992	40.7	6.0	0.9	5.0	56.8
1993	30.5	2.4	-	6.4	44.6
1994	29.6	1.3	0.6	8.9	48.1
1995	32.8	2.1	0.6	3.0	40.0
1996	32.1	1.3	1.4	6.5	44.0
1997	26.2	0.7	0.3	2.8	32.1
1998	24.0	1.1	0.0	1.4	27.7
1999	23.2	0.9	0.1	1.4	26.7
2000	26.6	0.2	0.6	4.3	31.7
2001	28.6	1.4	-	5.5	35.5
2002	35.2	0.4	-	5.6	41.3
2003	35.1	0.8	-	5.2	41.1

Source: SPO (2003).

Lastly, among the other exported agricultural products in North Cyprus are hamup, barley-wheat, tomatoes, cucumber, fresh beans and olive. Again they are so few in total exports that records are not worth of consideration.

3. Threats for Agricultural Sector in TRNC

Most of the small islands face the shortage of natural resources mainly water. Geographically North Cyprus is in a semi arid region where the annual rainfall varies between 200 to 600 mm (Brenner and Bıçak, 1998). North Cyprus starting from the beginning of the 20th century is experiencing a drop in the amount of rainfall. The limited resources like water and agricultural land area negatively affect agriculture in the country. North Cyprus experienced drought problem for the years, which created scarcity especially in the watery resources. Over extraction of water and recent decrease in the rainfall resulted in seawater intrusion in most of the areas. Even though the existing brooks are active limitedly during winter seasons and the agricultural production is supported by portable waters in summer seasons. Almost all of the citrus trees in Gazimağusa were dried, and portable water has been transported from other parts of the country. The largest aquifer of the island in Güzelyurt is subjected to the seawater intrusion. Water shortage both for domestic and agricultural use in North Cyprus is quite evident and requires an immediate solution. Various measures have been planned and implemented to increase the supply of water and use it more efficiently. Projects regarding water import from Turkey by tankers, in water bags (medusas) and/or by pipelines gave fruit and the first round of water was brought in water bags on July 25th, 1998 (Brenner and Bıçak, 1998). As an immediate solution to the water shortage, measures were undertaken to increase the supply mainly by importing portable water from Turkey and reduce the demand by using modern irrigation methods. So far, in Güzelyurt area, the potential of using the treated wastewater in agriculture has not been given the deserved attention. At the current situation, portable water project from Turkey has stopped and North Cyprus still experiences shortage in water.

The other problems in agricultural sector of North Cyprus are the lack of stock possibility of agricultural products, high costs and insufficiency in transportation, insufficiency in loans and credits, diseases in products, inability in adopting new technologies, insufficiency in agricultural researches, and high costs and deficiencies in inputs. The "Technical, Scientific and Economic Cooperation" agreement was signed in January 24, 1997 between TR and TRNC in order to overcome the problems faced in this sector. This agreement, which would survive for five years, provided such opportunities for both parties especially as benefiting from specialists, materials and results of researches made in this field mutually, acting together in marketing activities and aiding common agricultural investments (Katircioğlu, 2000). The investments made in agriculture have been always limited because of the lack of a healthy agricultural policy. Modern production technologies and therefore product differentiation for both domestic and foreign markets couldn't be adopted in the country. In addition to the burden of drought, efficiency and effectiveness couldn't be achieved in agriculture. Although compensation payments for drought has been started since 1982 and incentives like "General Agriculture Insurance Fund" subsidizing input and product prices continued in North Cyprus, targeted development in agriculture could never been obtained; in addition to this, such incentives only guarantee revenues of producers for the current year. Therefore, these incentives should be used in the way of increasing efficiency of agricultural sector contributing to the agricultural production and to the economy as a whole.

The aid and incentive policies have been adopted for the years to compensate the losses occurred due to bad climate conditions and drought problem. The gains from agricultural products, especially citrus products, were so low that only met production costs. This brought producers to a stopping point. Additionally, the producers faced problems with the buyers of agricultural products in their pricing and transportation. Wages in this sector are so insufficient that the care of agricultural land and pruning of trees even could not be done. Another challenge faced by agricultural sector in North Cyprus is fast urbanization, which caused active agricultural land area to be dried by 85%.

Lastly, the decision of the European Court of Justice (ECJ) to restrict TRNC exports to the UK (United Kingdom) market at the first stage and to other countries also at the second stage damaged the TRNC's export potential. The court ruled that health certificates issued by the TRNC authorities were not to accepted as substitutes for the Cyprus government's documents. This meant that the TRNC citrus fruit and potatoes exports to the UK markets would no longer receive preferential trade treatment as stated in the Association Agreement and the Customs Union (Yeşilada and Bıçak, 1995). To make matters worse, the British authorities interpreted this decision to cover all the exports from TRNC and began to impose trade restrictions by eliminating preferential trade status of export commodities from North Cyprus. According to the Court's decision, citrus and potatoes exports that required health certificates could no longer carry the TRNC stamp. Furthermore, textile exports from North Cyprus, which entered the European Union (EU) markets under EURO I documents, could no longer receive preferential treatment because the Court's decision underlined the fact that TRNC was not a recognised state. Additionally, textile exports to the EU market from the TRNC would be subject to an additional tax of 14%. Thus, the exports of the TRNC received a major blow by the ECJ decision. Once ECJ ruled that decision to restrict TRNC exports to UK and EU markets, TRNC has started to use Turkey (Mersin) stamp for its exported goods. Unfortunately, this decision have brought a great burden to TRNC foreign trade and economy.

4. Conclusion and Policy Implications

Cyprus is known as "Green Island" over the centuries. Its strategic location was always in interest of ancient civilizations and today is still. Drought is not the only threaten for agriculture in the island but also bad governance, populist policies and very few investments in this sector caused today's situation. An important part of green areas and citrus fields were dried. There have been a very few rainfalls during 1980s and 1990s in Cyprus. Fortunately, there are significant increases in rainfalls in last years starting from the beginning of 2000s. But a solution is still required to the water shortage in the island. The best solution is to construct a pipeline between TR and TRNC. However, this requires a huge investment. Additionally, water shortage and deterioration of water quality should be improved by successful water resources management that requires incorporating advanced technologies.

An agriculture faculty was opened in Lefke European University of North Cyprus and it is expected to handle the problems in the sector through academic researches. On the other hand, Cyprus

problem is again at the agenda of United Nations and other countries since the beginning of 2004. A solution is expected during 2004 in the island. But according to the proposal of Kofi Annan, Guzelyurt region is planned to be left to Greek Cypriots. If this comes to be reality, it will be a great handicap for Turkish Cypriots, because that region is the most important part of the island in agriculture sector. Majority of agricultural and watery products and exports are produced in Guzelyurt region. Therefore, this proposal cannot be easily accepted.

Turkish governments had aided North Cyprus since 1974. Substantial aids were given to Turkish Cypriots every year. But unfortunately, these aids were not used in efficient areas. Nowadays, majority of these aids are used to finance current expenditures like salaries. Therefore, this situation should also be at the agenda of the Turkish Cypriot government. Investments in agricultural sector should be attracted. But political risk of the country is a major obstacle for foreign direct investment. If a successful solution is brought to the Cyprus problem, then attracting foreign direct investment will be possible. On the other hand, Turkish investors should be encouraged and attracted from the mainland Turkey. One good example in this regard is the fish farm opened by Dardanel Ltd. of Turkey in Karpaz Sea in 2003. This type of investments should be expanded in the island.

Despite the political and economic embargoes against Turkish Cypriots, foreign marketing and advertisement channels should be improved. These facilities of the island are highly insufficient. But high transportation and production costs are the most important obstacles for a successful marketing.

As a conclusion, a possible solution to the Cyprus problem might bring some improvements to the sectors of North Cyprus economy including agriculture. But still, government has to deal with the problems faced in agriculture sector. First, drought problem should definitely solved by water project in conjunction with Turkey. Establishing a pipeline from Turkey will be high enough not only for North Cyprus but also for South Cyprus. Second, investors from Turkey and even from Turkish Cypriots living in Cyprus and other countries should be encouraged to come and make investment in every field of the economy. And lastly, aids given by Turkey and other institutions should be moved towards investments for production. North Cyprus is a very small country; therefore the contribution of even any small improvement in the sectors will contribute to this small nation higher. So every member of the country should take responsibility for the future of North Cyprus. If this cannot be succeeded, migration lasting many years will increase more and more.

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