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Dubois, Virginie-Anne

Veröffentlichungsversion / Published Version  
Zeitschriftenartikel / journal article

#### Empfohlene Zitierung / Suggested Citation:

Dubois, V.-A. (2016). Armenia's Agricultural Sector: From the Subsistence Line to Discrete Take-Off? *Caucasus Analytical Digest*, 88, 6-11. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-88521-0>

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## Armenia's Agricultural Sector: From the Subsistence Line to Discrete Take-Off?

Virginie-Anne Dubois, Orléans

### Abstract

This contribution discusses the overall lay-out and (re-) orientation of Armenia's agricultural sector since it decreased to subsistence levels and a virtual standstill in the early 1990s. Promising due to both a set of favorable, natural-physical conditions and agricultural traditions, part of which survived Soviet agricultural policies and the country's "transition" and integration in the world economy following its collapse. Armenia's agriculture and agro-industry have had a timid resurgence in the past few years. Driven by the emergence of small and medium-sized farms and the regionalization of a number of primary sector activities and the presence of markets in Russia and the Persian-Arab Gulf, the potential of Armenia's agriculture remains stunted, however, by the country's land-locked position and the border blockades that have been in effect since the Nagorno-Karabakh War, both of which are obstacles for proper agricultural exports.

### Enclaved Twice

Situated at the heart of the Lesser Caucasus, the smaller of the two chains that form the greater Caucasus range, Armenia is the smallest of the successor states of the USSR if non-recognized states such as Transnistria and Nagorno Karabakh are excluded. With approximately 98% of its population consisting of ethnic Armenians, it is also linguistically and ethnically one of the most homogenous. Like most other constituent republics of the USSR, it became independent in late 1991 and has been going through similar episodes of radical social and economic changes and "transitions," which also naturally and dramatically affected its rural areas and its agricultural sector. There is a particular aspect about Armenia in relation to its primary sector and its agricultural potential since we are discussing a sector that is directly dependent on physical geography.

Two aspects are of interest: First, there is Armenia's landlocked status and its geographic-political isolation since the political turbulences during its early independence years. Second, there is its mountainous character, consisting mainly of highlands. Indeed, the first factors are decisive in its relations with the neighboring states and in the organization and viability of trade routes for raw agricultural produce as well as for processed agro-industrial products. The second reality heavily determines the possibilities for region-based agricultural diversification as well as the cultural practices connected to these regions. Contrary to Georgia, which has direct access to the Black Sea, and Azerbaijan, which has direct access to the Caspian Sea, Armenia has no maritime front. Since the Nagorno-Karabakh War (1988–94), eighty percent of its borders, more specifically those with Azerbaijan and with the latter's ally Turkey, are closed, with no possibility for people and goods to officially pass.

Thus, deprived of a major economic asset, namely, access to the sea, agricultural trade and access to potential markets face a double impediment. This predicament also determines the nature and direction of Armenia's exports and imports. For the time being, Armenian agricultural goods are largely dependent on transport routes north into Georgia and on to the Black Sea and the Russian markets and on the southern route and the border crossing into Iran at Agarak for access to the Middle Eastern and Persian-Arab Gulf markets. The blockade and the limited number of export routes and surcharges on products caused by it are obstructing not only the expansion of trade networks but also the emergence of parallel trade, which is particularly burdensome for economic development and for the growth of a proper tax base.

### The Highlands, Impediment or Asset?

One of the driving forces of Armenia, one of which is also a key pillar of its development, consists of the wealth of agricultural practices, which are derived from an ancestral know-how in the fields of cultivation and artisanal processing. The relationship between the natural environment and the conditions for agricultural development are dependent on the benefits and constraints of the geographical situation of Armenia, particularly on the mountainous environment to which it belongs. Regardless of altitude, the mountainous environment in agricultural development is crucial because Armenia's territory is essentially uniformly highland. The country's average altitude is 1,800 meters. About ninety percent of its area is situated above 1,000 meters, and three-quarters are above 1,500 meters, while the peak of Mount Aragats, north of the capital Yerevan, culminates at 4,090 meters.

The altitude and the country's staged relief form the components of the agricultural landscape, which also

benefits from a continental climate with large temperature variations; summer temperatures can increase to over forty degrees centigrade and in winter temperatures can decrease as low as negative 40 in some areas. At approximately 2,500 hours, annually, the rate of sunshine exposure is very high. In addition, two large drainage basins, which are jointly nicknamed “the water tower of the southern Caucasus,” cover the majority of irrigation needs. The Aras River forms the border with Turkey. The Kura River flows in Azerbaijan, Georgia and into the Turkish province of Kars but has a number of tributaries that flow into the Armenian territory. Lake Sevan, one of the world’s oldest and largest mountain lakes, which, perched at 1,900 meters, constitutes a hydrological reserve of 32.8 cubic kilometers, is also part of the geography. Objectively, these are excellent conditions for the rehabilitation and development of a solid agricultural base. The regional particularities resulting from the configuration of the relief and the topography divide the country into an array of vast high-altitude plains, basins, trays and peaks and compose a remarkable diversity in the conditions of farming.

### History as Agrarian Destiny

After this concise presentation of Armenia’s natural conditions, which result from its geographical location, it is also necessary to take into account a number of historical factors in order to inform our statements relating to developments in the agricultural sector. If there is no doubt about the ancient nature of Armenia’s environment-specific agriculture, archaeological evidence shows that six thousand years ago, amphoras were used to preserve and export fruits and wine in these parts of the Southern Caucasus. The country’s formation and integration in the USSR in the late 1920s sealed the main directions of its agricultural development for the next seven decades. Indeed, the application of socialist-statist production and management principles in the field of agricultural production has led to the replacement of a system based on the peasantry by an industrial mode of agricultural work. Of course, between 1929 and 1936, the Armenian SSR did not escape the collectivization of the means of production and of the land.

Once it was dissolved along with the USSR itself, this form of industrialized and heavily ideologized agriculture, which was in the end often disconnected from contemporary developments, left a pernicious legacy (supply deficits, soil depletion, quantitative and qualitative degradation of flocks, etc.). In addition to old cultivations and practices, more so-called “technical” crops were introduced, which were dependent on heavy irrigation and whose production quota were determined by the central state plan. However, after 1991, the transi-

tion from a statist and bureaucratic agrarian system to a privatized one led to the appearance of a large segment of small and medium-sized household farms along with impoverishment and an upheaval of modes of production, as it did in many successor countries of the USSR. If, shortly before the dissolution of the USSR, agriculture represented less than twenty percent of both the official GDP and employment of the Armenian SSR, it rose in prominence due to the food security needs of the population facing uncertainty during the first phases of transition and the collapse of the non-agricultural and social sectors to one-third of the GDP and 40 percent of employment by 1999.<sup>1</sup>

The former 869 large collective and state farms on approximately 147,000 separate parcels of land were privatized to create approximately 338,000 farms and rural households with relatively small plots, with an average size of 1.1 hectares. Nonetheless, neither socialism, reduction in agricultural productivity, transition, or more rapacious form of capitalism, which immediately followed, fully obliterated traditional practices and local specificities. The stark reduction in the sizes of farms and plots after 1991 even made the use of heavy and costly machinery designed for vast spaces superfluous. Thus since its independence, once the country and its society were gradually integrated into the global economy, Armenia has constantly been confronted with a new economic environment and the challenges of adaptation. The collapse of socialism, the planned economy and the disappearance of central subsidies guaranteed markets both in the USSR and its wider socialist commonwealth, but the severing of export channels were not the only shock the country had to cope with.

### From Socialism to Subsistence

The economic and infrastructural damages caused by the Spitak earthquake in late 1988 further weakened the already stagnating socialist economy of what was then still the Armenian SSR. The overall situation of heavily dislocated agriculture and the decline of food security and supplies were further worsened by the Nagorno-Karabakh War that started at approximately the same time in a country with a clear agricultural vocation and destiny. Armenia’s passage to a market economy and its integration in the world economy that came with its independence also made its economy, including its agricultural component, vulnerable for the first time since Armenia’s creation as a modern nation-state to

<sup>1</sup> Millns, John (2013), *Agriculture and rural cooperation examples from Armenia, Georgia and Moldova*, Policy Studies on Rural Transition no. 2013-2, Budapest : FAO Regional Office for Europe and Central Asia, p. 11–12.

conjectural shifts and external competition. The result were starkly decreasing yields and overall productivity. Until the 2000s, the primary sector was by far the least productive.

Many agro-industrial factories also closed down due to the severing of commodity and spare part supplies and the disappearance of their markets. At the same time, during the first years following the collapse of the USSR, many Armenians, being faced with shortages and unemployment, sought refuge in the fertile countryside to engage in plot agriculture on land from which they first removed industrial crops such as cotton, tobacco and sugar beets to replace them with more diversified food crops. Rural society in this most southern (together with Turkmenistan) of the former states of the USSR managed to conserve a number of traditional agro-pastoralist practices and a strong orchard and vegetable gardening culture as well as a certain amount of knowledge in the field of treatment, processing and stocking of produce. All of these practices were and remain rooted in a rather strong social fabric and family-centered culture.

With independence also came international aid from both donor institutions and from the Armenian diaspora in the U.S., Western Europe, Russia and the Middle East. Thanks to a number of technical support programs from donors in the US, Russia, the EU, specialized international organizations, and of course the inputs of Armenian farmers and workforce themselves, the negative agricultural growth curves have been gradually reversed since the mid-2000s. Towards the end of the 2000s and the beginning of the 2010s, there seems to be a sustainable rebound of agricultural production with a stronger agricultural infrastructure, a regular renewal of equipment, a renewed marketing in the food industry and, therefore, a return of demand and orders. New or rehabilitated larger-size industrial structures with foreign—mostly Russian and Diaspora-Armenian—capital coexist near much smaller structures whose operations are sometimes based at the village or at the regional level. Regardless, the essential is that a revival of the primary sector can be observed.

### The Plateau Backbone

Agricultural economics remains a pillar of development due to the numerous benefits of favorable physical and historical conditions that allows pastoralism, gardening and, vegetable, fruit production to join livestock raising. The plateaus that are situated around the mountains, which are sometimes carved by gorges and canyons, are located in the northern Lori province on the Shirak high plains around Gyumri, around Lake Sevan, and in Armenia's southern "tail." These spaces are quite suitable for the cultivation of cereals and potatoes, which

are both staple foods. In the early 1990s, industrial crops were removed from the fields in the high plains in order to replace them with these and other food crops to meet basic food needs. Since the mid-2000s, potato growing has become a regional specialty of the Shirak plateau and the Lake Sevan region, which jointly ensure more than half of the national production. The high prices for potatoes also led to a situation where they are often grown in city courtyards. Similarly, the agricultural machinery park was gradually replaced, even if globally, and still tends to be rather obsolete.

It is also largely in these mountainous regions, plus the hills of Aragatsotn close to the capital that the pastoral dimension and vocation of the Armenian countryside manifest itself. People have always taken advantage of the complementarity of spaces by adapting their lifestyles to bioclimatic terracing. However, if this trait is common in many parts of the highlands, the southwest of Armenia has a different rationale: the transhumance practices have long been steered by the cross-border nature of the southern Caucasus countries, especially those between Armenia and the Azerbaijani exclave of Nakhchivan (Naxçıvan). Currently, it is no longer possible to observe the same practices given the border closures. This sector has also not escaped the difficulties of post-Soviet transition because it has been confronted with the reduction of forage areas due to the new borders, the slaughtering of livestock for immediate consumption, the inability to maintain herds up to level, and the failure to improve the gene pool of the cattle. However, cattle remain at the heart of the Armenian pastoral economy and is also increasing. Sheep farming, which is ancient to the area and a traditional activity of Armenia's Yezidi and Kurdish minorities, has increased because of the emergence of markets in Iran and high-income countries around the Persian–Arab Gulf.

### The emergence of *terroirs*

Poultry farming is also experiencing a recent revitalization with a better control of the sector, whereas pig raising is still hindered of its potential by the competition from Russia, a clear lack of technical capacity to properly manage the activity, and the limited genetic potential of the Armenian pigs. Finally, irrigated areas and lower foothills are particularly conducive to gardening, fruit growing and viticulture or grape cultivation. The Plain of Ararat, which is situated north of the valley of the Aras and irrigated by the Sevan and Aras drainage complex, is the most fertile depression of Armenia. It is bounded to the north by Mount Aragats and to the south by Mount Ararat (called Masis in Armenian), and although it is a national symbol of Armenia, it is located in Turkey (where it is called Ağrı Dağı). There

are many historical accounts about these areas; these accounts describe the idyllic nature of these fertile areas and the array of product growing there because of the silt that is deposited by the Aras River and the warm summer months. Additionally, the area currently grows produce as diverse as melons, peaches, apricots, pomegranates, grapes, cucumbers, tomatoes, eggplants and peppers. The western Armavir and Ararat regions provide three quarters of Armenia's fruit and vegetable production, a net increase since the mid-2000s.

Similarly, the vineyard is an iconic culture of Armenia and marks its identity because its core cultivation area is situated in the wide piedmont of Mount Ararat where, according to Biblical and popular tradition, Noah and his entourage quenched their thirst after the retreat of the deluge. Local grape varieties grow and develop in this southwestern part of Armenia and are maintained through an old tradition of vinification. One example is in Areni, where wine-making is believed to go back approximately six thousand years. Having also suffered the impact of socialist-statist modes of production and management and its subsequent collapse, a critical mass of cultivated land area is maintained and has gradually expanded. However, production is primarily increasing, which highlights an increase in yields through better control of wine-making and as well as a new dynamic of the winemaking process.

### Time for Agro-Investment

Except for the last decade, Armenia's agricultural output generally showed a rising trend (see Figure 1 on p. 10); it is necessary to consolidate the output, initially to continuously meet local needs. Indeed, as can be seen in Figure 2 on p. 11, the trade balance of Armenia is in deficit, and the country imports foodstuffs that it could adequately and sufficiently produce itself. Additionally, the storing and processing infrastructure, which are both the real missing links in the entire chain, may

need to be restructured. This restructuring is necessary not only to optimize the Armenian agricultural potential and to meet both domestic needs but also to meet external requests in order to reset the trade balance and counter the harmful effects of the blockade. Finally, we must question the valorization of production, which necessarily involves the notion of quality, adapted to the Armenian singularity, to highlight the existence of *terroirs*, regions with specific agricultural traditions and comparative advantages in their production. The industrial as well as artisanal means of processing can be a vehicle to allow the value of these quality productions.

Over the years, a number of structures that are born from local and regional initiatives and cooperation networks between various actors are operational. One example is the pastoralism development project in the northern province of Tavush that is supported by France's Conseil départemental des Hauts-de-Seine (a regional council), the Fonds arménien de France and the Center for Agribusiness and Rural Development (CARD), a one-stop agricultural development board that is supported by a number of international donors and international NGOs. Their purpose is to promote Armenian regional products through processing methods that not only include ancestral knowledge but also comply with current standards with a solid training of the workforce. A number of corporate structures also started to tap into Armenia's agrarian and agro-industrial potential, such as the ACBA-Crédit agricole bank, which provides rural micro-crediting and Pernod-Ricard's purchase of Armenian brandy factories. Unfortunately, these corporate structures have received minimal advertisements. These structures are the ones, however, that should be encouraged so that Armenia is able to offer diversified and sustainable methods of recovery of its agricultural production and of its productive land area.

*Translated from the French by Bruno De Cordier*

### About the Author

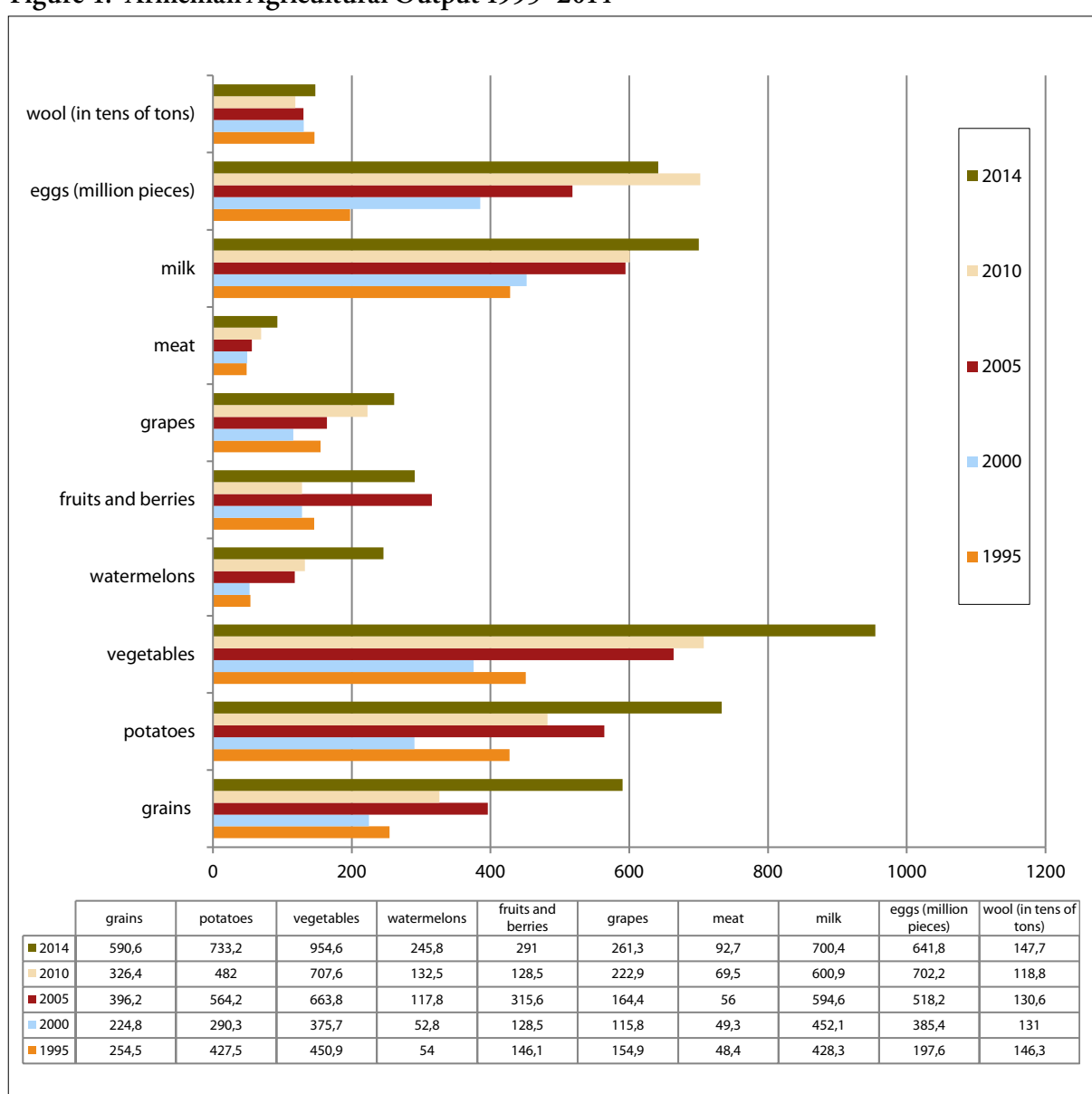
Virginie-Anne Dubois holds a Doctorate Degree in Geography at the Université d'Orléans with the support of the Centre d'Etudes pour le Développement des Territoires et l'Environnement (CEDETE). She is working on the question of farming and food industry in Armenia.

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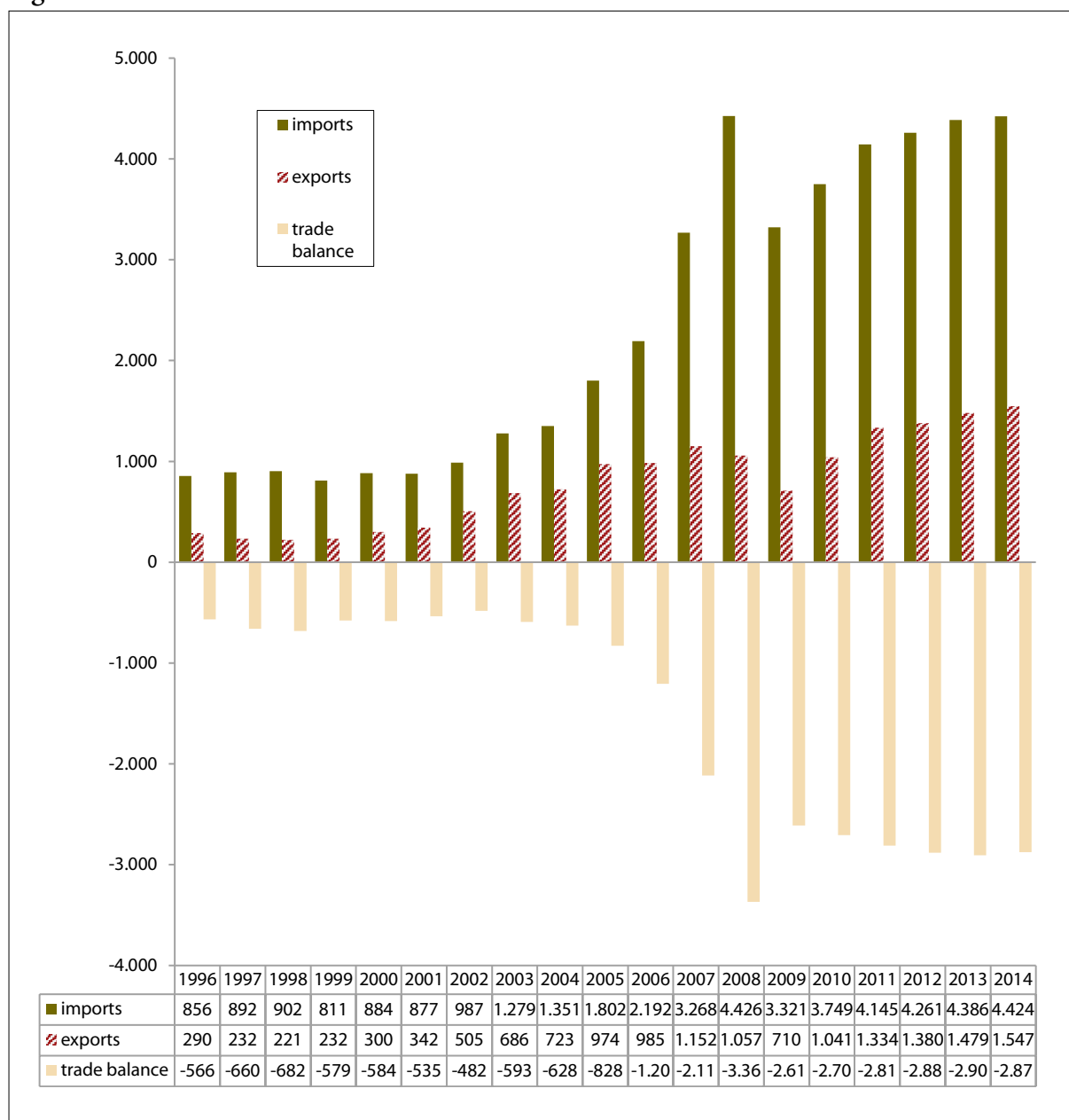
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**Figure 1: Armenian Agricultural Output 1995–2014**



Source: Virginie-Anne Dubois, on the bases of data of the National Statistics Service of the Republic of Armenia, Statistical yearbook of Armenia, 2015, <[www.armstat.am](http://www.armstat.am)>

Figure 2: Armenian Trade Balance 1996–2014



Source: Virginie-Anne Dubois, on the bases of data of the National Statistics Service of the Republic of Armenia, Statistical yearbook of Armenia, 2015, <[www.armstat.am](http://www.armstat.am)>