ECTAP
ENHANCED COMPETITIVENESS OF TAJIK AGRIBUSINESS PROJECT

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Fruits and vegetables in Tajikistan:

Recent evolution
&
Prospects for development

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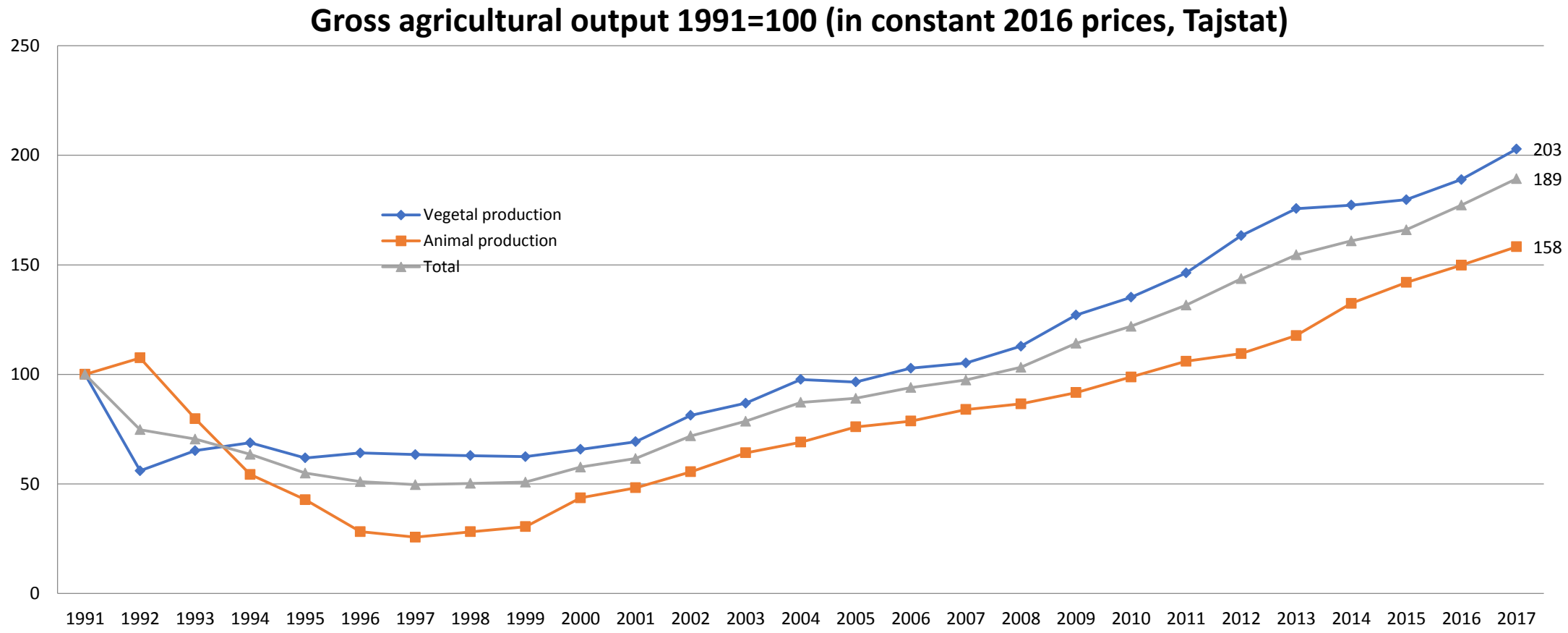
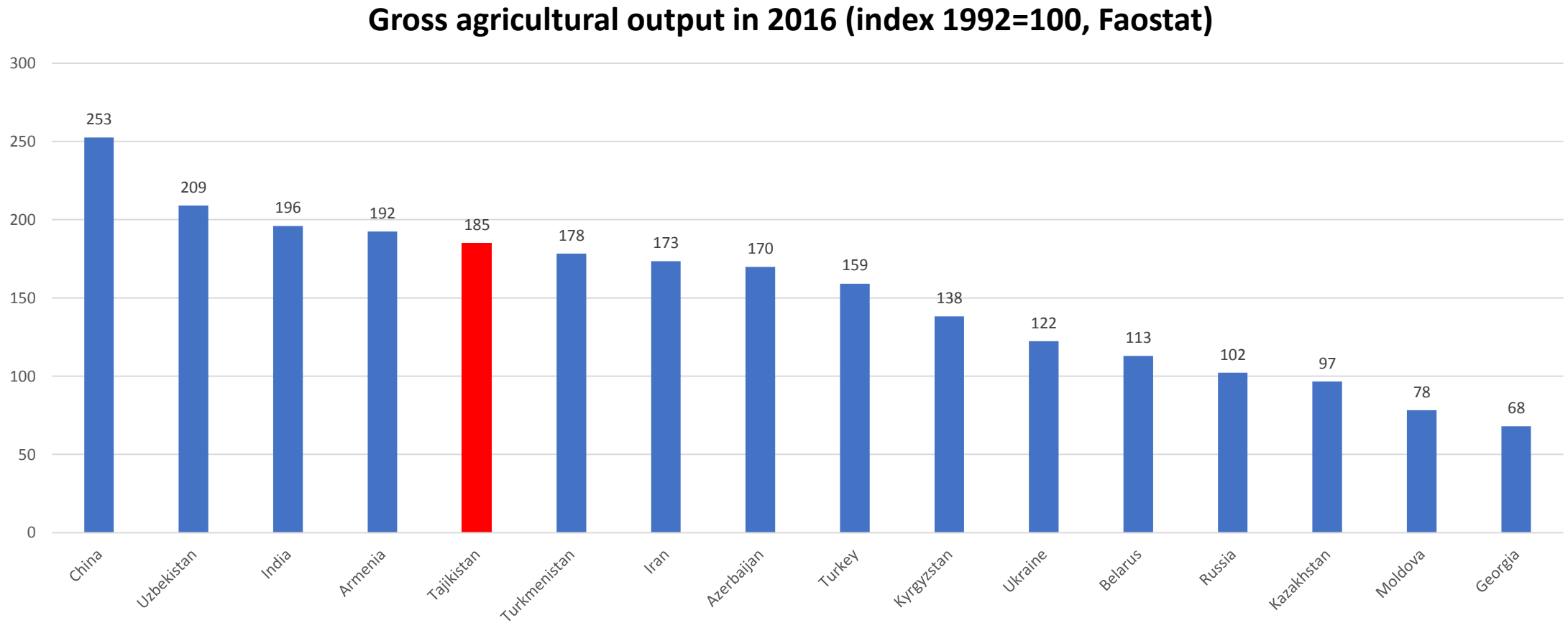
The general agricultural background

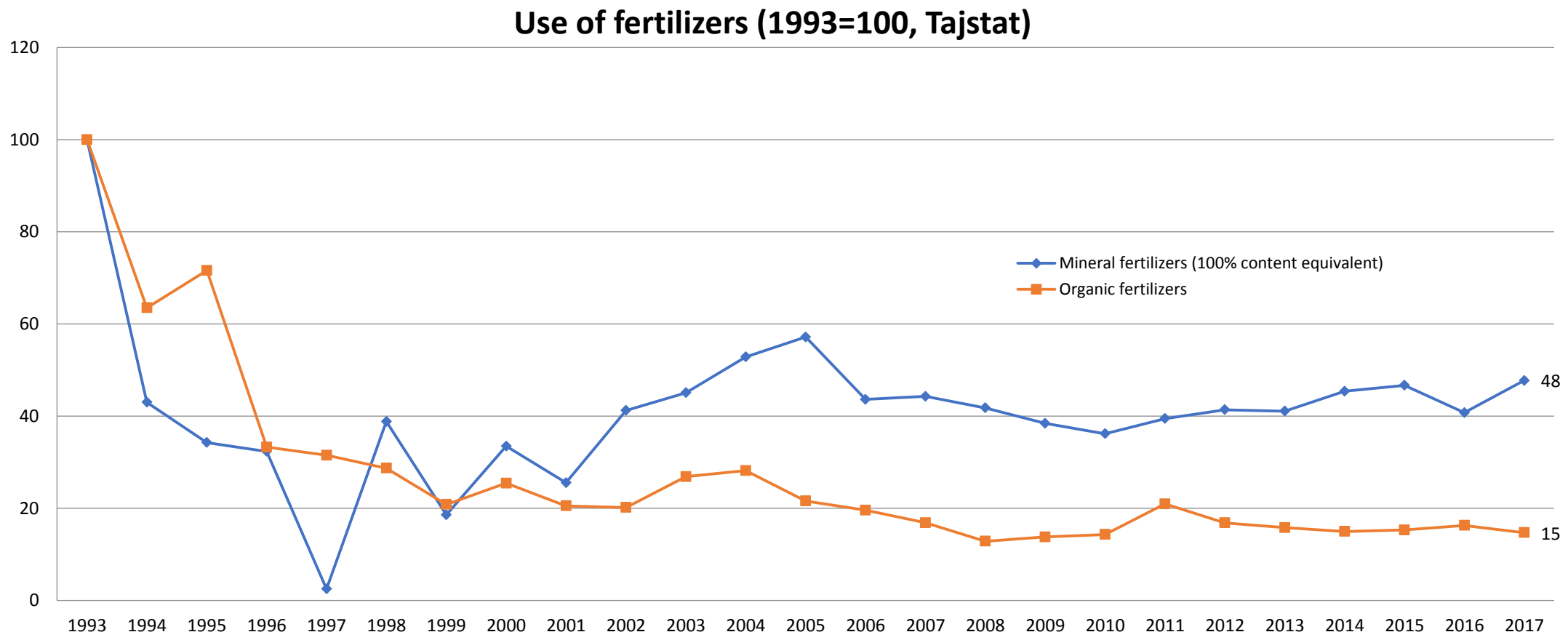
After a sharp initial contraction linked to the collapse of the Former Soviet Union (FSU) and the subsequent Civil war, agriculture in Tajikistan has substantially rebounded. Growth of gross agricultural output (GAO) accelerated after the adoption in 2007 of Presidential Decree 111 for Freedom to Farm



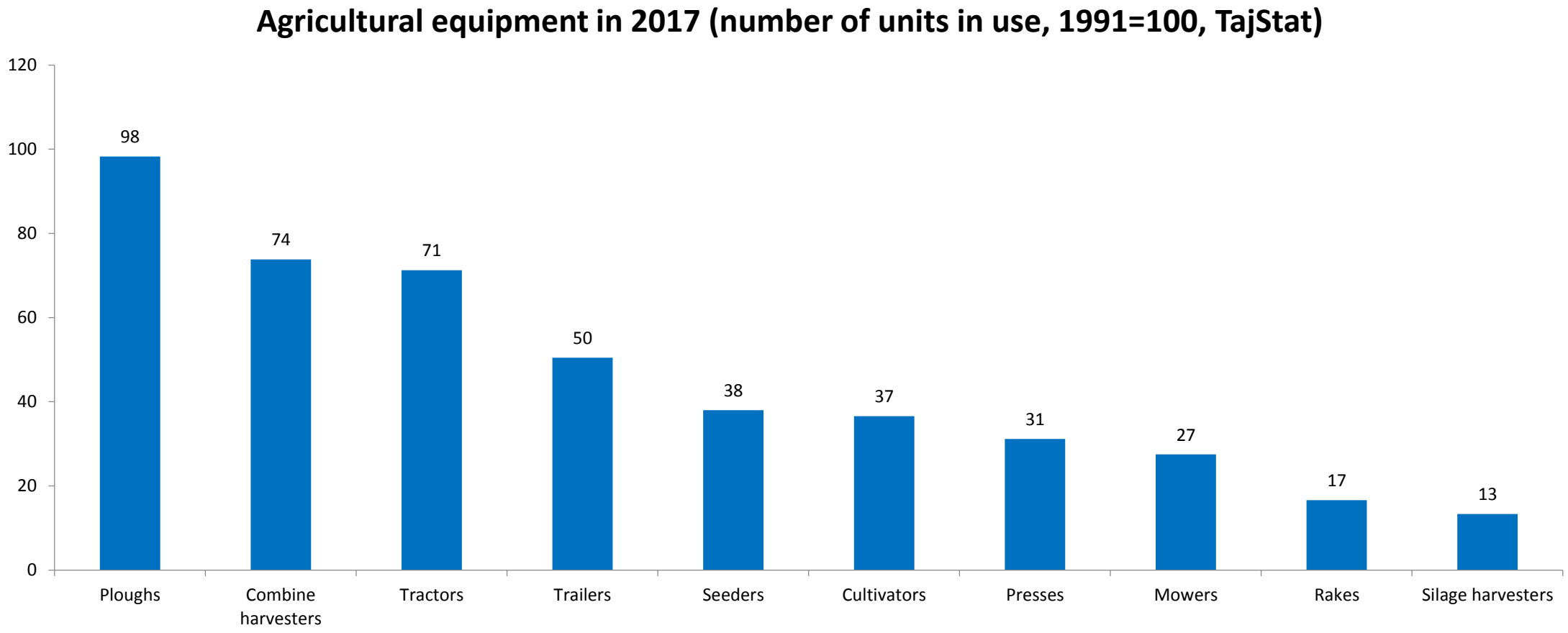
De facto, Tajikistan has been among the best performers in the region in terms of GAO which is now 85% above Soviet levels. Only Uzbekistan and Armenia have achieved better results among Transition countries



These very positive results have been achieved despite an acute reduction in the use of short term inputs such as mineral and organic fertilizers

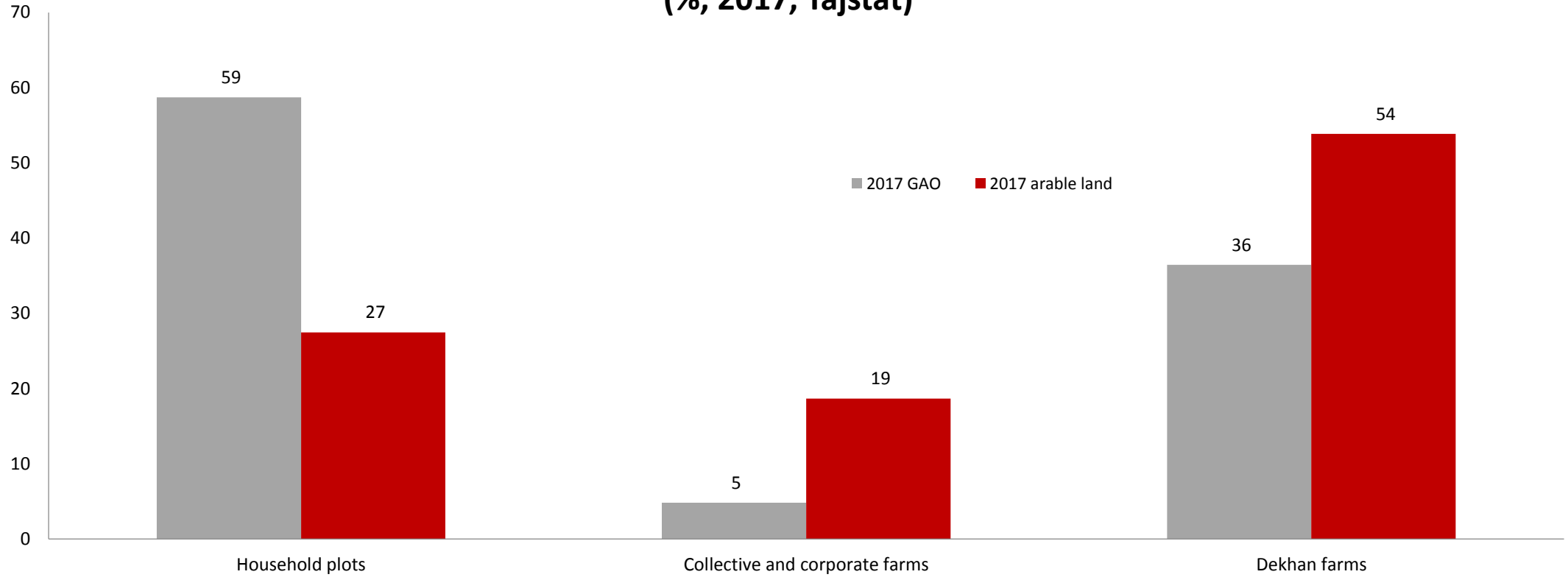


Long term assets such as irrigation infrastructure and medium term assets such as agricultural machinery have also suffered quantitatively and qualitatively

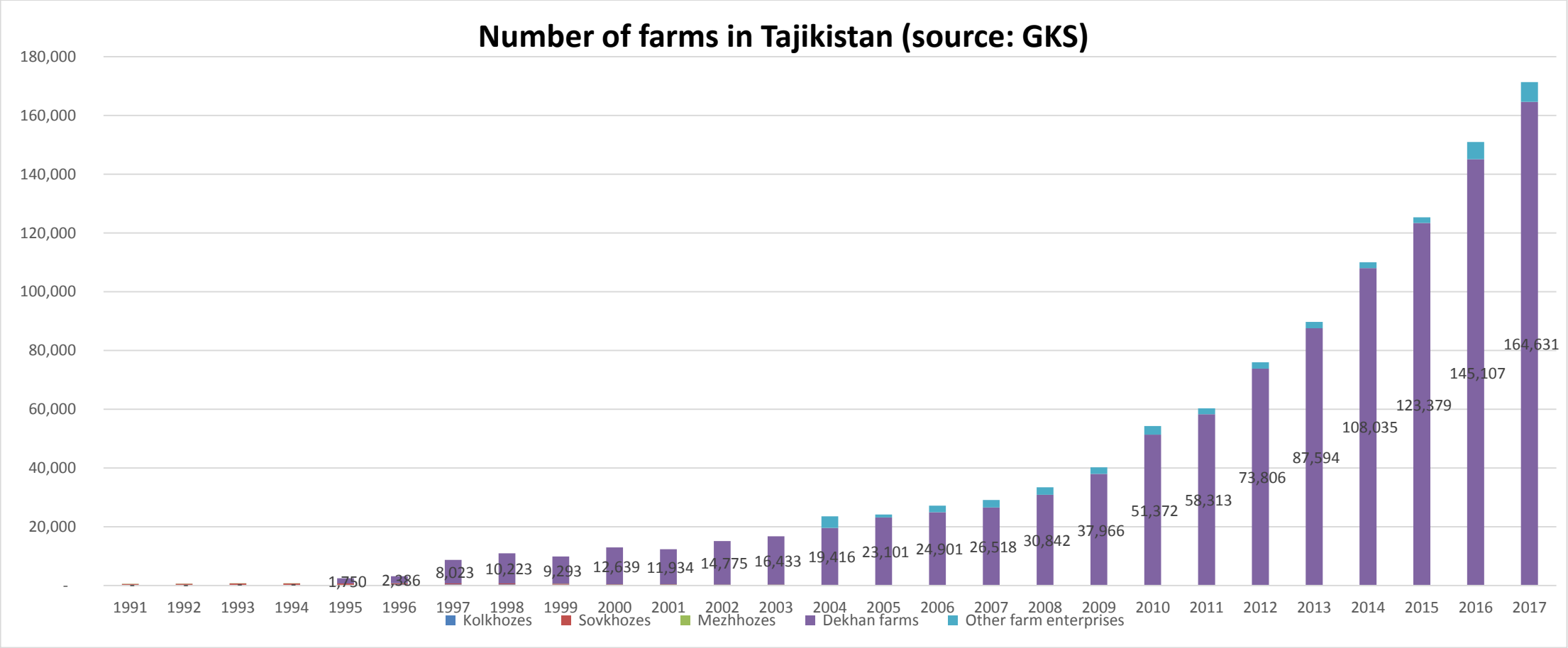


Most of the agricultural “miracle” of Tajikistan can be linked to the hard work of smallholders. Today, household plots and family dekhan farms provide respectively 59% and 36% of GAO with 27% and 54% of arable land. Even though some of them are technical benchmarks, collective (cooperative) and corporate farms only generate 5% of GAO on 19% of arable land

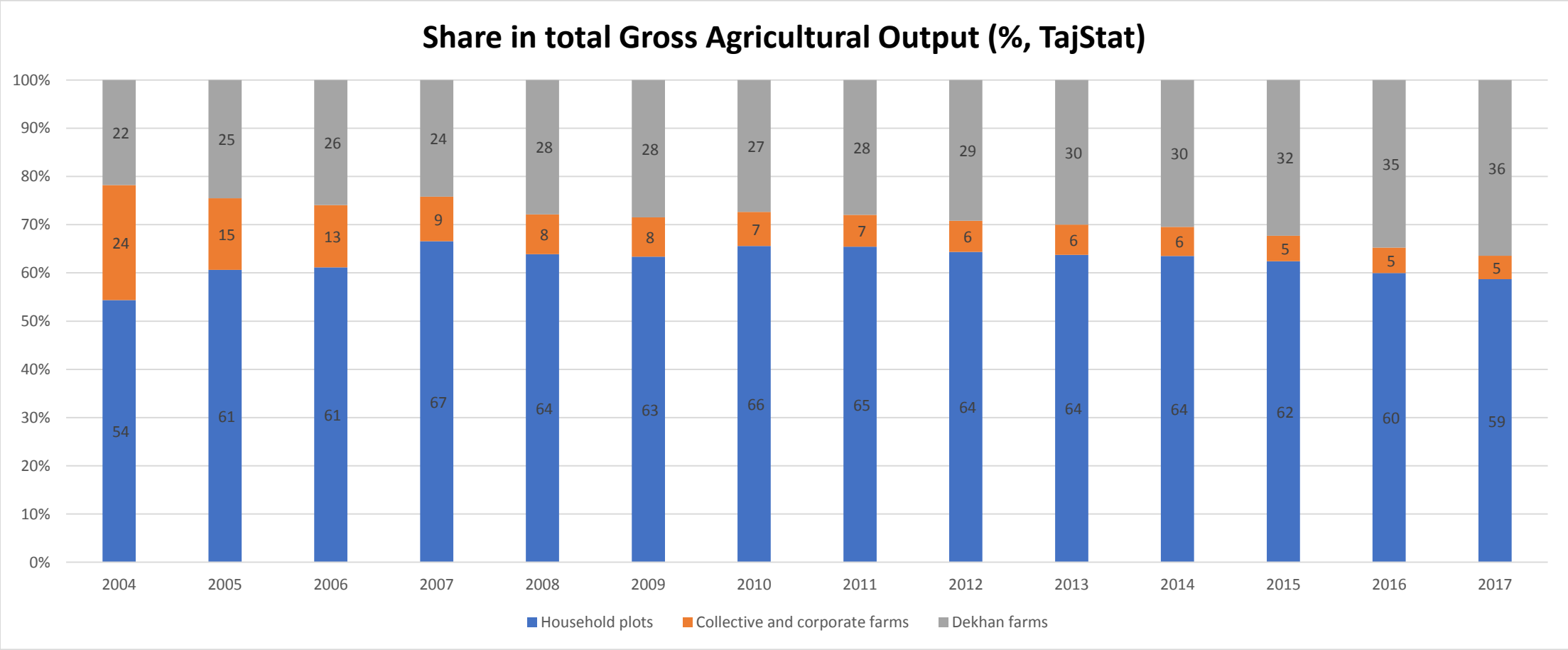
Share in output and arable land of various types of farms in Tajikistan (%, 2017, Tajstat)



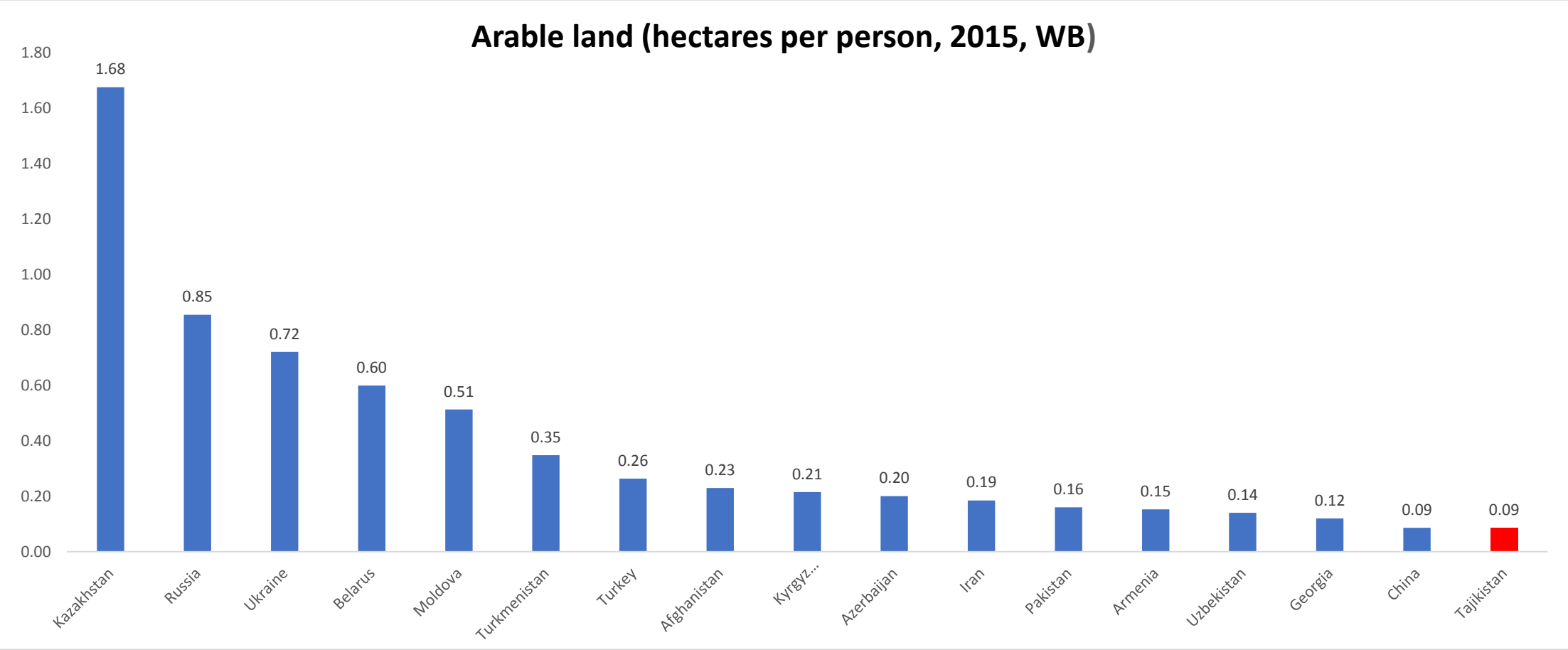
Since the structural reforms of Freedom to farm implemented after 2007, there has been a very strong increase in the number of family dekhan farms. They were more than 160,000 in 2017 against 26,000 in 2006



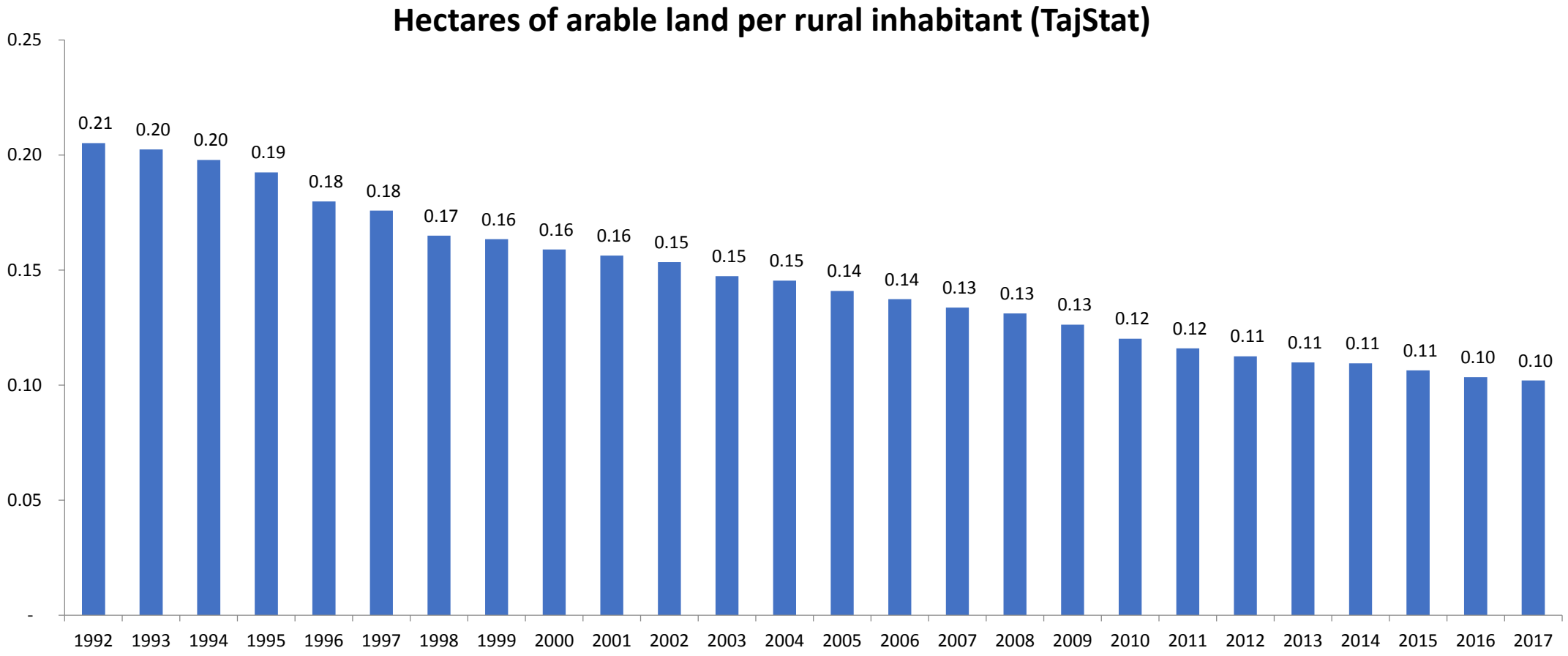
During the last decade, dekhan farms have increased their share in GAO from 24% to 36%, largely at the expense of household plots who are focused on self-consumption while dekhan farms sells most of their output on the market



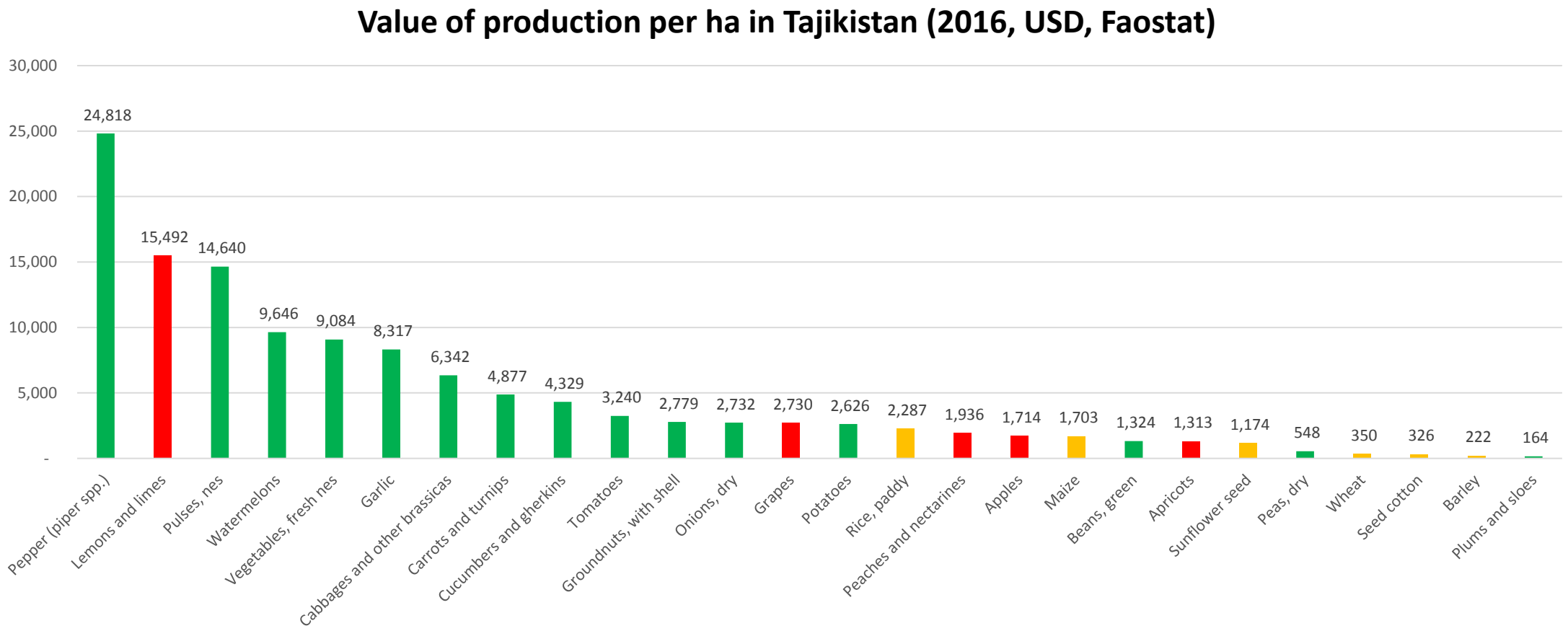
The main structural problem faced by Tajik agriculture is the limited availability of land. It reflects the fact that Tajikistan is a small mountainous country where only 6% of the territory is arable land. The problem is made worse by the degradation of centralized canal irrigation and drainage systems



Despite large migration to Russia, the rural population is increasing by 2.4% per year. As it is mainly involved in agriculture which makes for more than 2/3rd of the workforce and 21% of GDP, pressure on land will be stronger and stronger. It will also be aggravated by the negative impact of Climate change

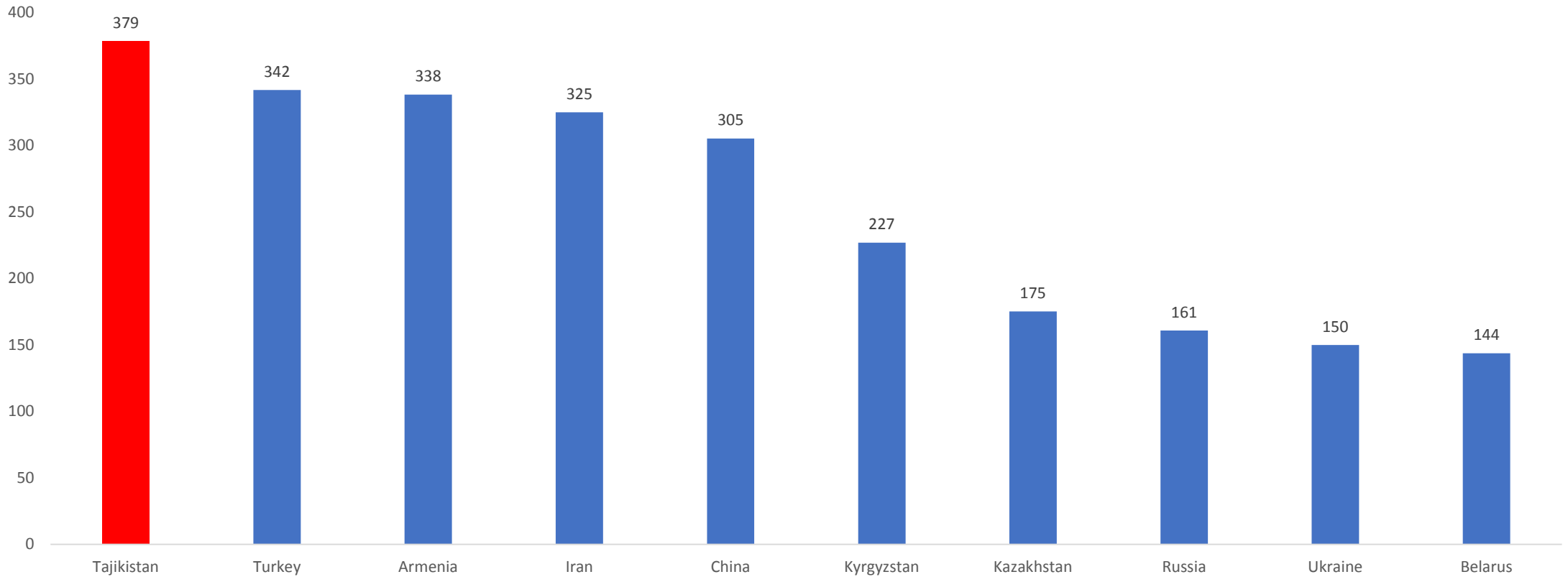


Against this background of limited availability of land and large availability of labour, it makes economic sense for Tajikistan to concentrate more on labour intensive activities such as production of fruit and vegetable, which can generate much higher income per ha than large crops such as wheat



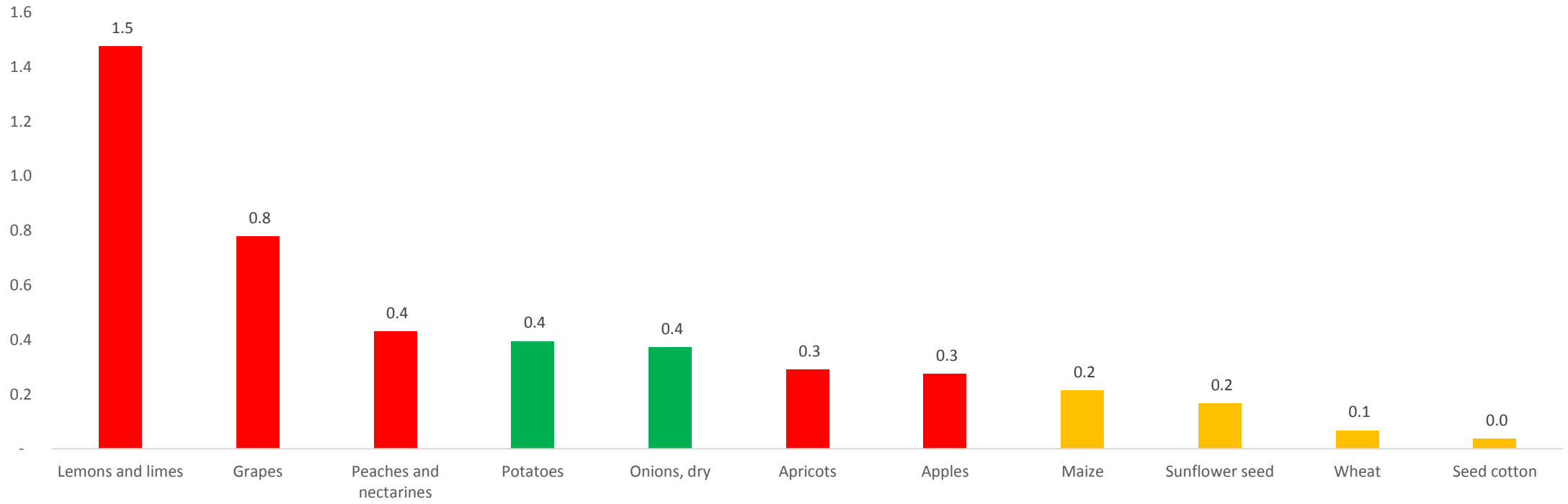
In the past, wheat prices were much higher in Tajikistan than in the big CIS countries because of problems for transit trade through neighbour Uzbekistan which are now over. The new geopolitical environment is generating downside pressure on wheat prices and profitability of wheat farmers but it is also making possible to export high value fruit and vegetable products through Uzbekistan without any tariffs to CIS countries

Producer Price Wheat (USD/t, 2009-2012 average, FaoStat)



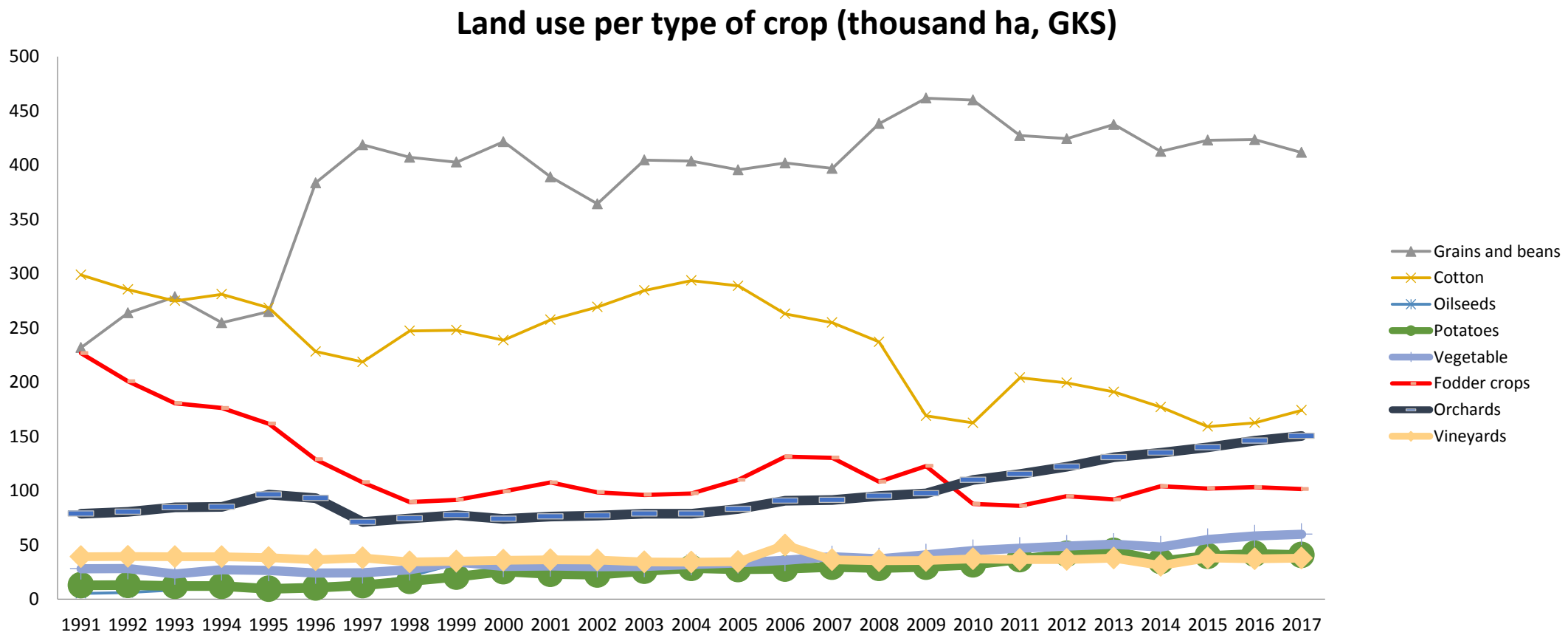
Another key factor for a stronger focus on fruit and vegetable is the fact that they have a much better farm income/water consumption ratio than large crops, even without drip/sprinkler irrigation. In Climate change perspective, they are also the crops of the future

Value for water (USD of farm income/cbm of water, 2016, Faostat, calculation based on water requirements in Baluchistan IUCN and current yields)

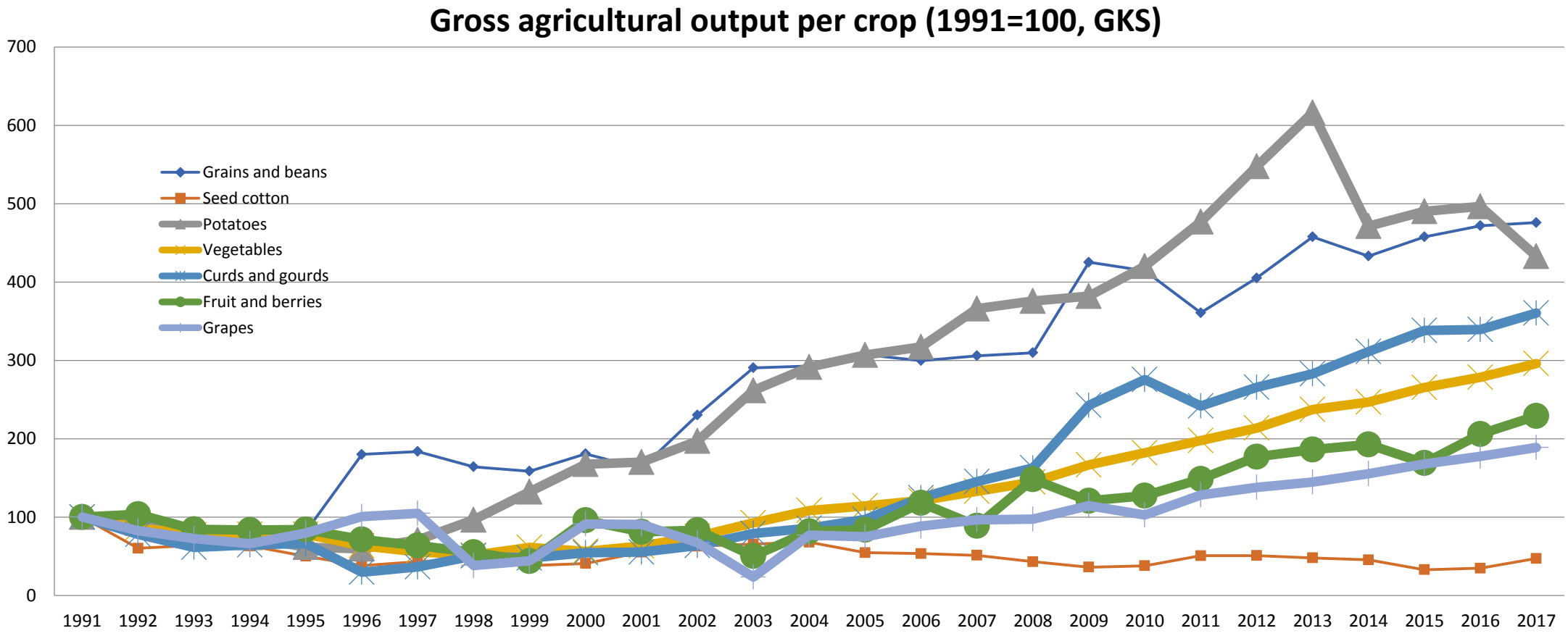


Fruits and vegetables in Tajikistan
The recent evolution

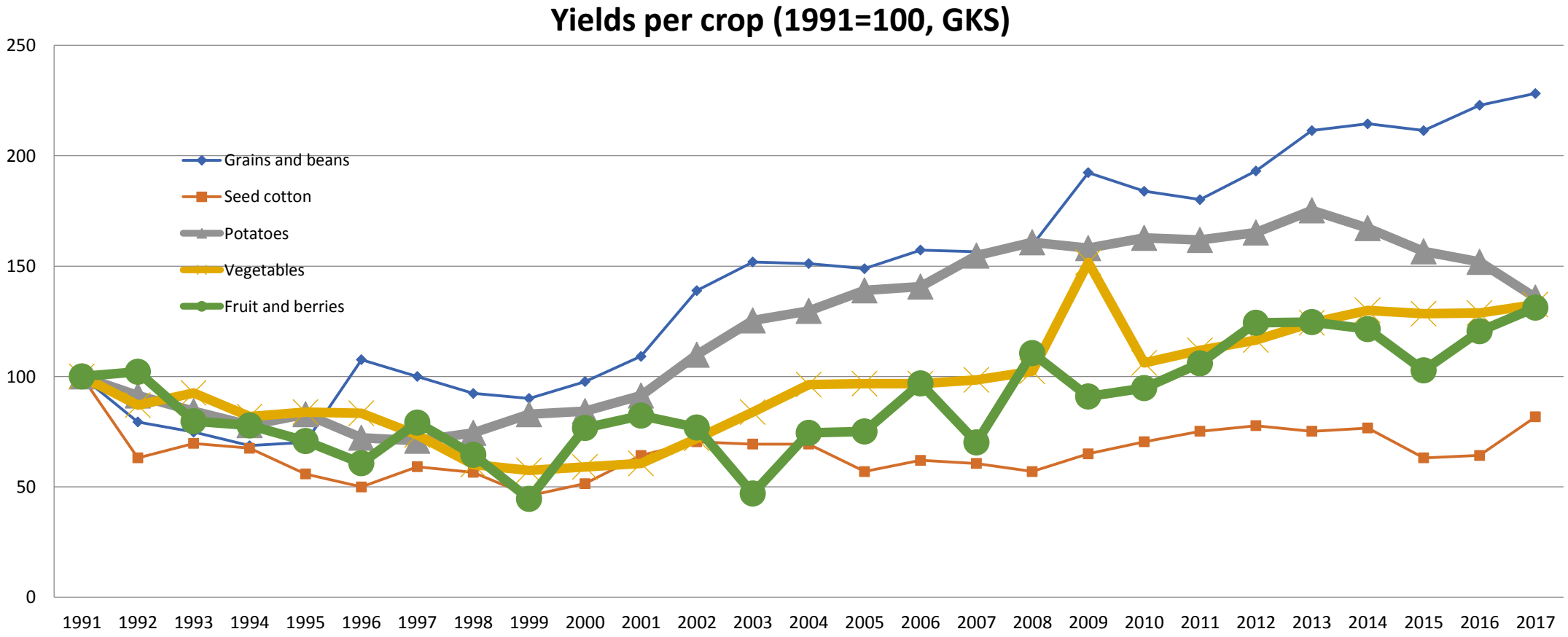
After FSU, there has been reallocation of land towards wheat with large contraction of areas for cotton and fodder crops. Today, orchards account for 15% of total arable land and permanent crops, vineyards for 4%, potatoes for 4%, other vegetables for 6%, and melons and gourds for 2%, making for one-third of total acreage



Output of fruits and vegetables has performed strongly. It was multiplied 6 times for potatoes, in particular in mountainous areas which have ideal agronomic potential. Unfortunately output contracted since 2013, mainly because of poor access to high quality seeds

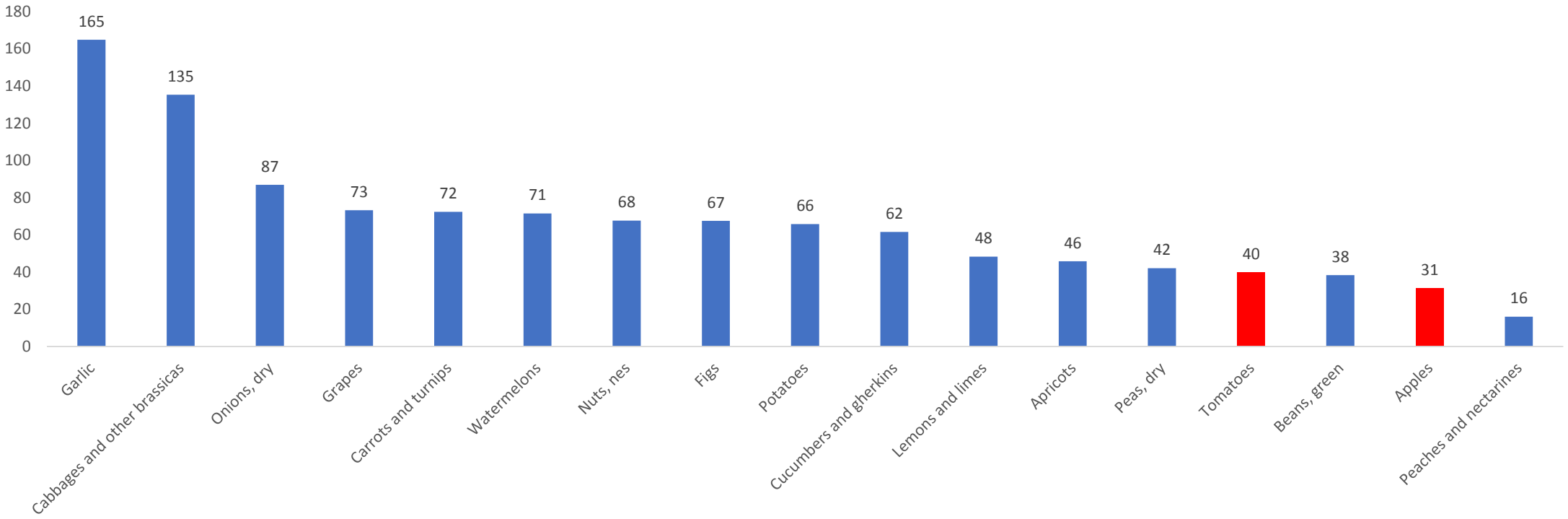


Much of the increase in output of fruits and vegetables has been linked to yields which are now well above their FSU levels, contrary to cotton



Tajik yields for fruits and vegetables are usually not so far from those of more advanced countries like for instance Turkey. They are even higher in some cases. But for key products like apples or tomatoes where traditional methods are still used, there is still a big lag. Large dissemination of modern intensive orchards or greenhouses could therefore massively increase output

Tajik yields of fruit and vegetables compared to Turkish (Turkish yields=100, 2016, Faostat)



Relatively high yields despite contraction of technological inputs reflect first excellent natural comparative advantages for fruit and vegetables

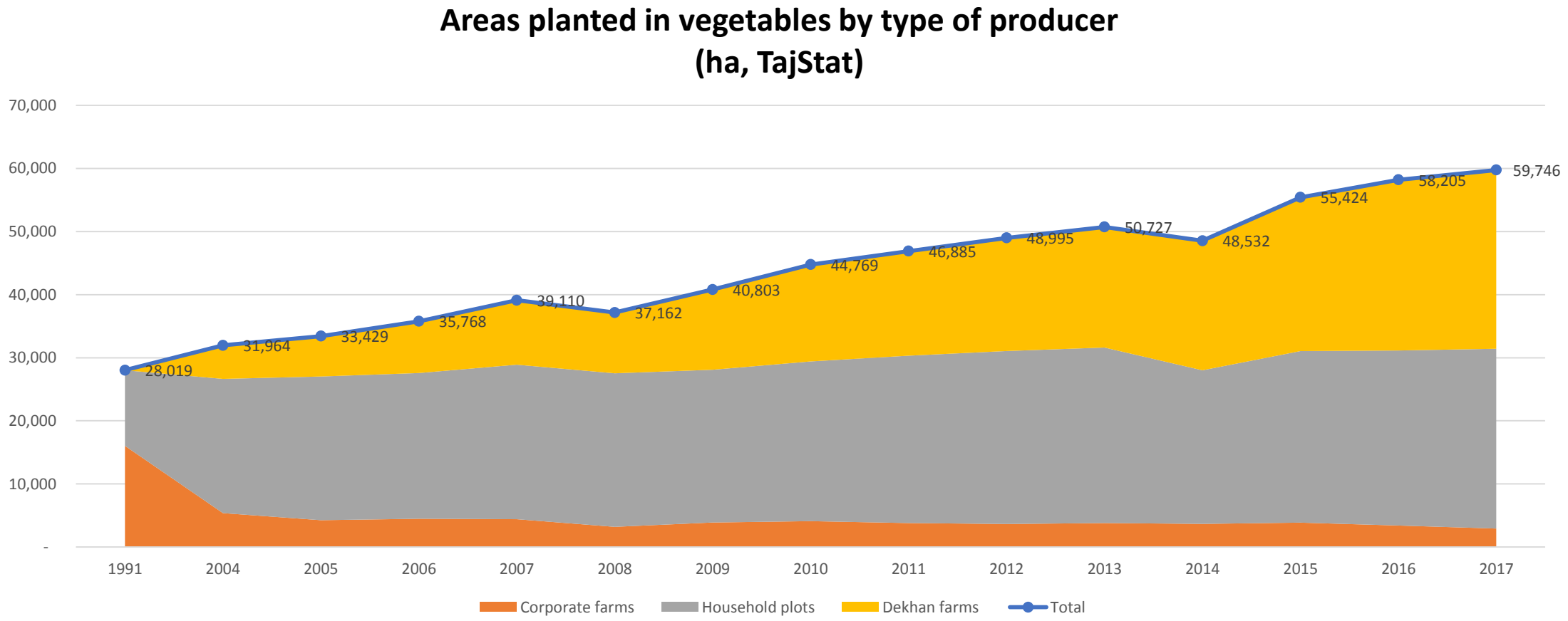
- The mountainous regions of Central Asia combine the best agronomic factors in the world for pome and stone fruit and have been for that reason the birthplace of most non-tropical fruit species. The following fruit originate from Central Asia, among others:

- Apples
- Pears
- Apricots
- Cherries
- Plums
- Almonds
- Walnuts

- Tajikistan is naturally the best place in Central Asia for pome and stone fruit as it combines good water resources, dry summers and cool/cold winters, and large daily differences in temperature (between day and night in summer time)
- The same positive factors apply for the cultivation of most vegetables and especially potatoes in mountainous areas as they find agronomic factors similar to those of their birthplace in the Andean mountains

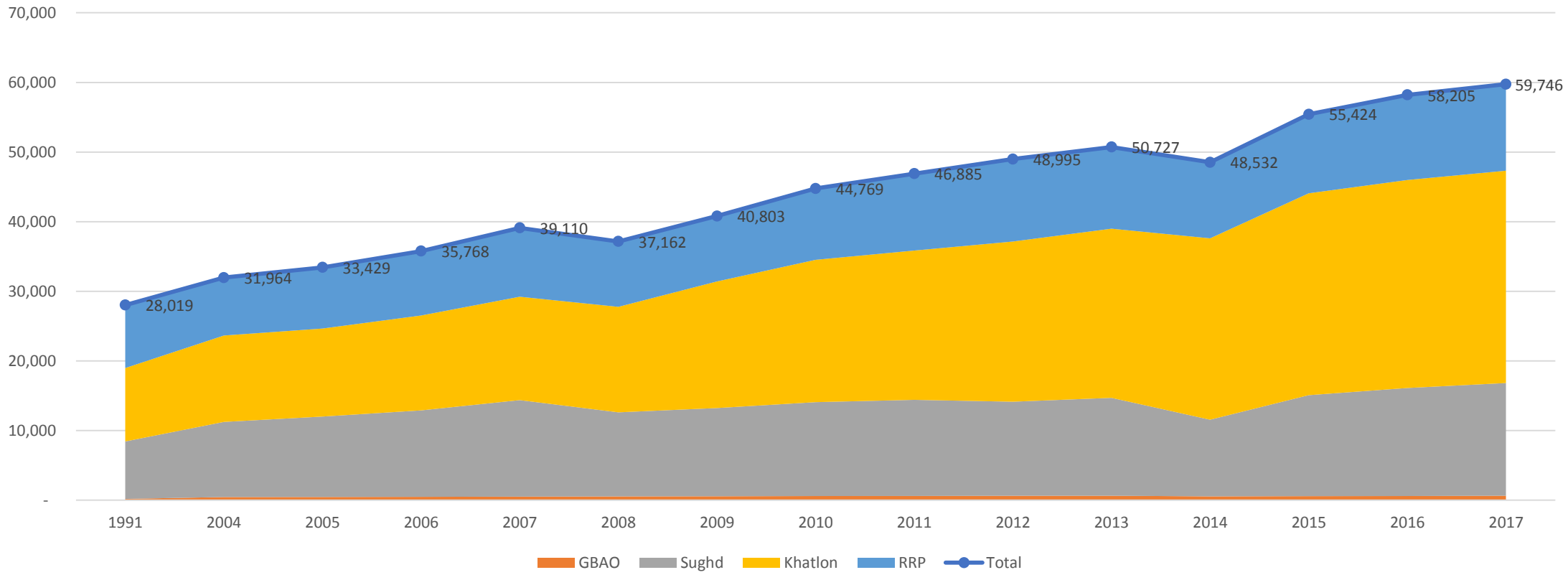
Tajikistan also benefits from the lowest labour costs in CIS. This is a critical factor for competitiveness as fruit and vegetable production is highly labour intensive. In addition, fruit, grapes and vegetable growing is vitally part of the DNA of Tajik farmers who have a very good knowledge of traditional cultivation techniques inherited from thousand years of experience

Areas planted in vegetables had remained nearly unchanged from end of FSU till 2004. Since then their acreage nearly doubled. While previously, most acreage was with households, Dekhan farms are now the leading players in this field with 49% of output on 47% of total cultivated land in 2017

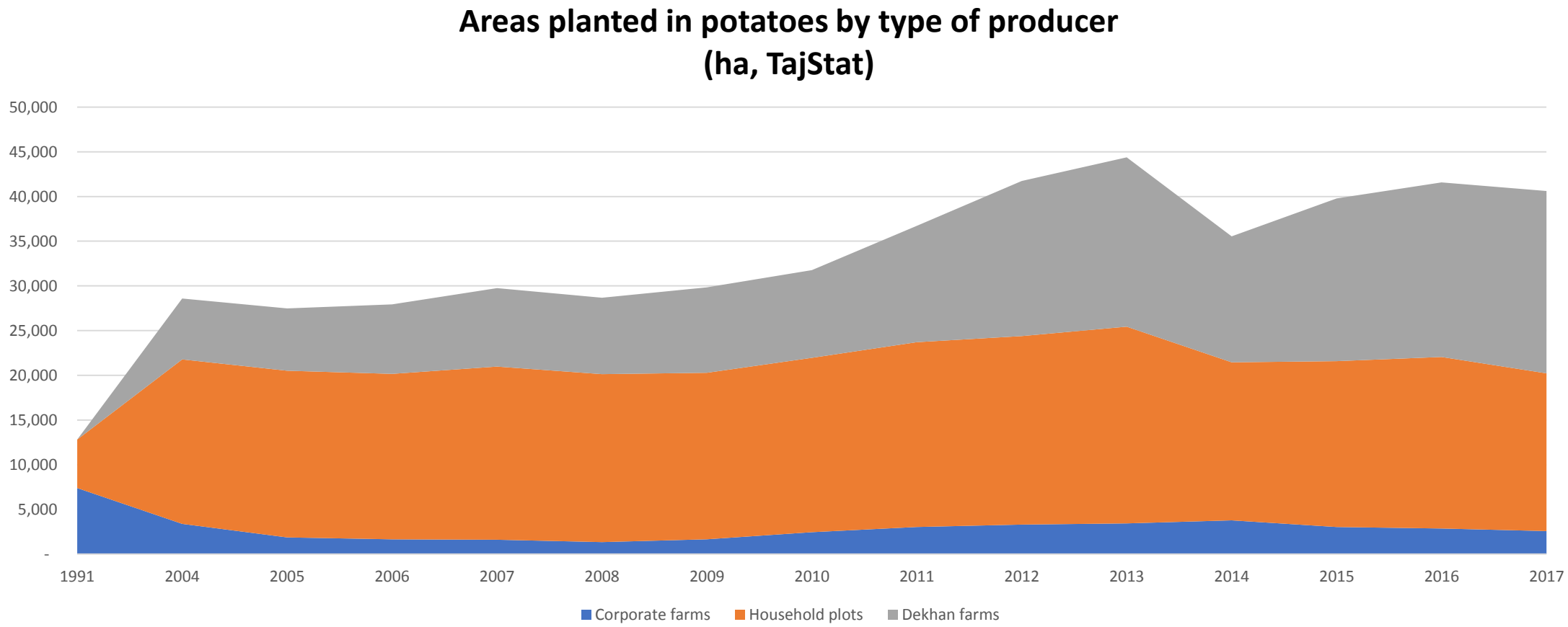


Most of the vegetable acreage is now located in Khatlon (51%) as well as most of the output (55%). Sughd, which was traditionally the most important region for vegetables makes for only 27% of acreage and 26% of output, and RRP for 21% and 18% respectively. However, Khatlon makes for only 7% of canned vegetables against 20% in Sughd and 73% in RRP. And 94% of processing of tomatoes is still in Sughd

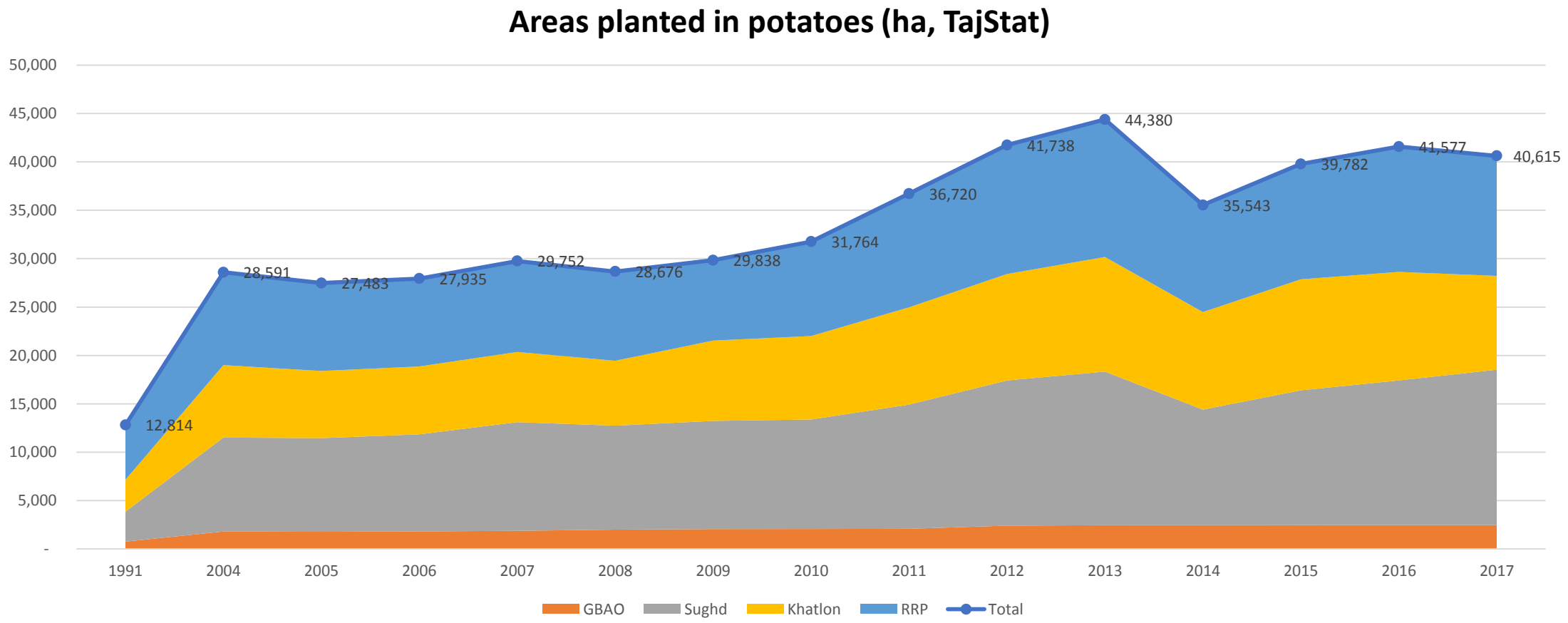
Areas planted in vegetables by region (ha, TajStat)



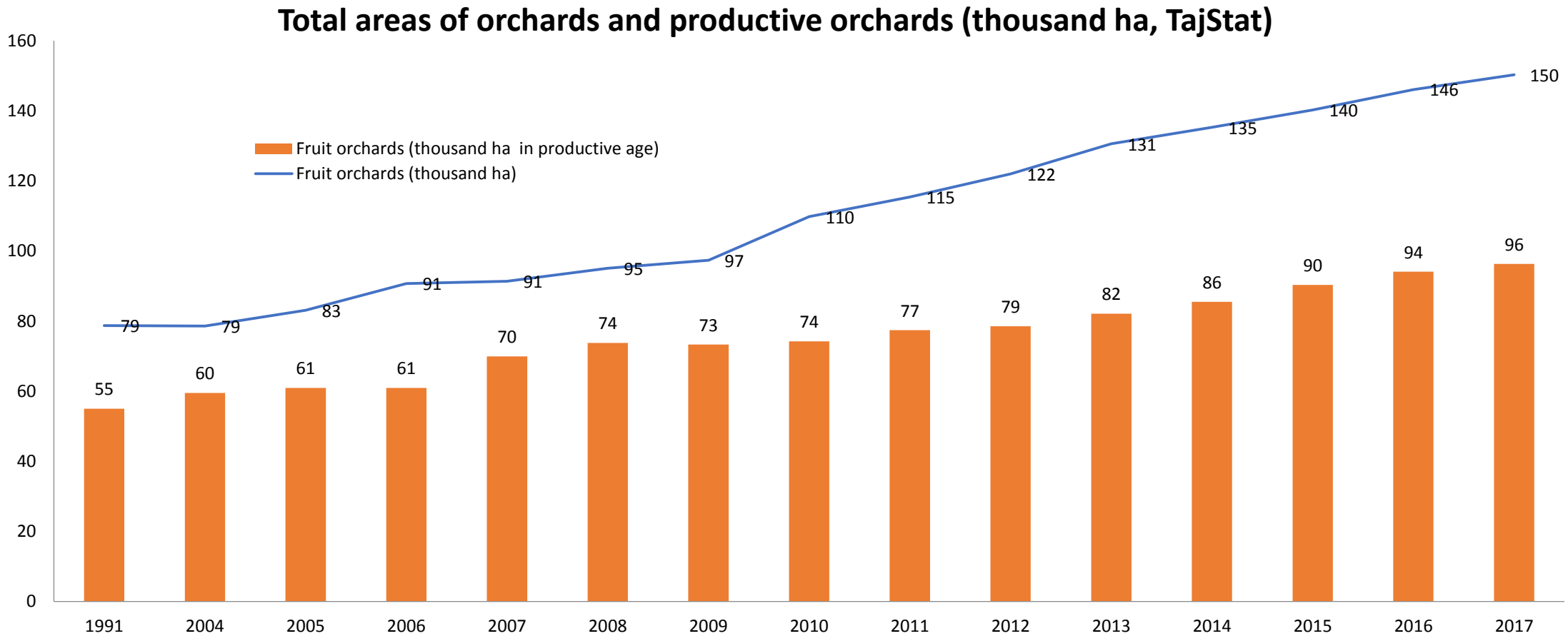
Areas planted in potatoes have increased less than those for vegetables. But as for vegetables, dekhan farms are now the leading player with 55% of total output on 50% of potato acreage



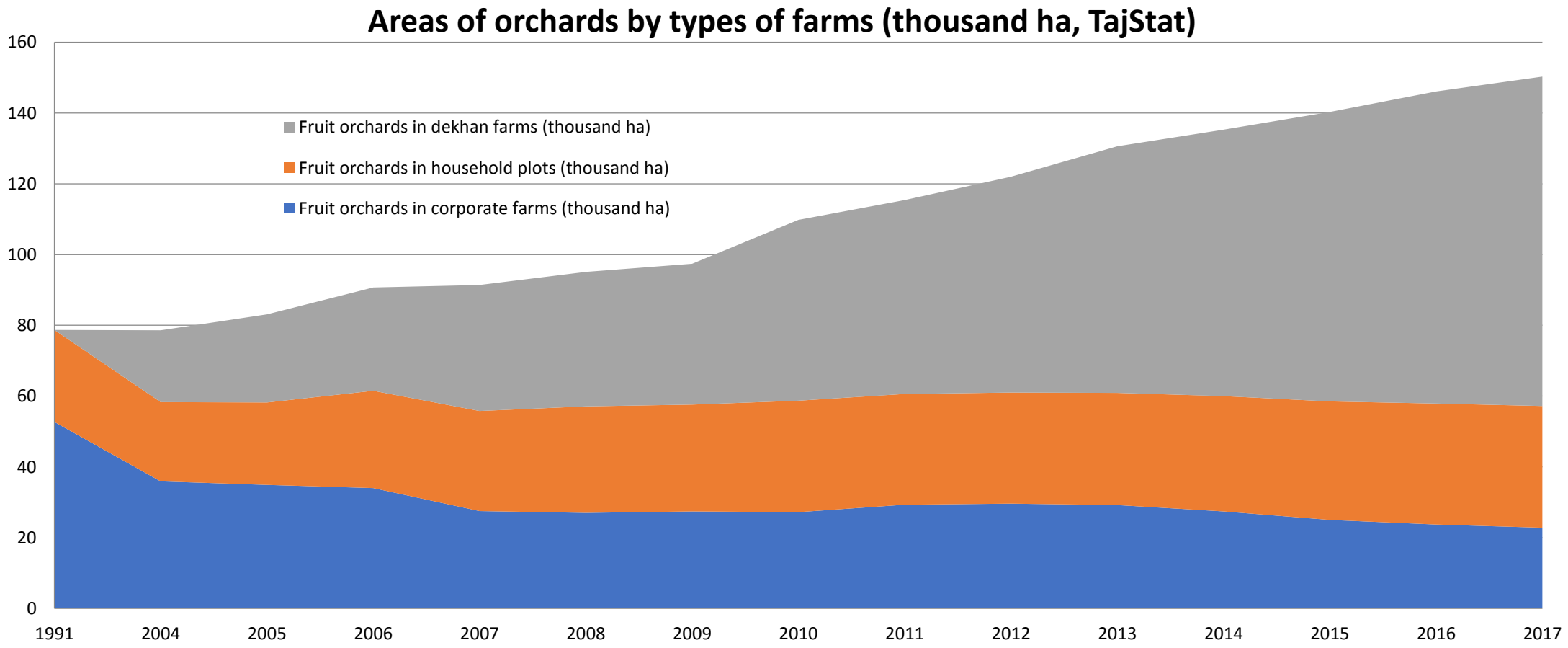
Sughd and RRP remain the leading regions for potatoes with respectively 41% and 31% of output and 40% and 31% of acreage. Yields and quality are particularly good in remote mountainous valleys of Gorno Matschoh and Jirgatal which are protected from viruses thanks to high altitude. As of today, there is no processing of potatoes



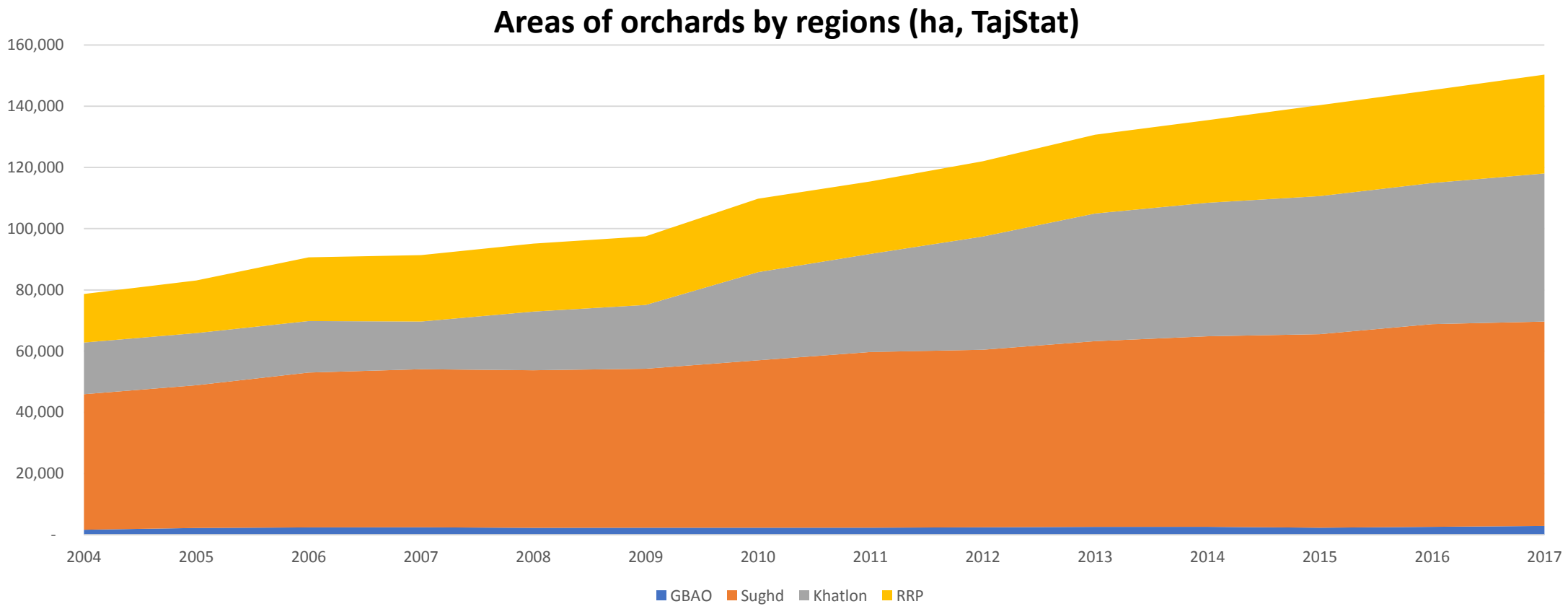
As for vegetables, acreage dedicated to orchards remained similar to that of FSU until the middle of last decade. Since then, it has nearly doubled. Unfortunately only 64% of orchards are already productive as most of them are based on traditional seedlings. Fast producing intensive orchards with very high yields per ha remain the exception



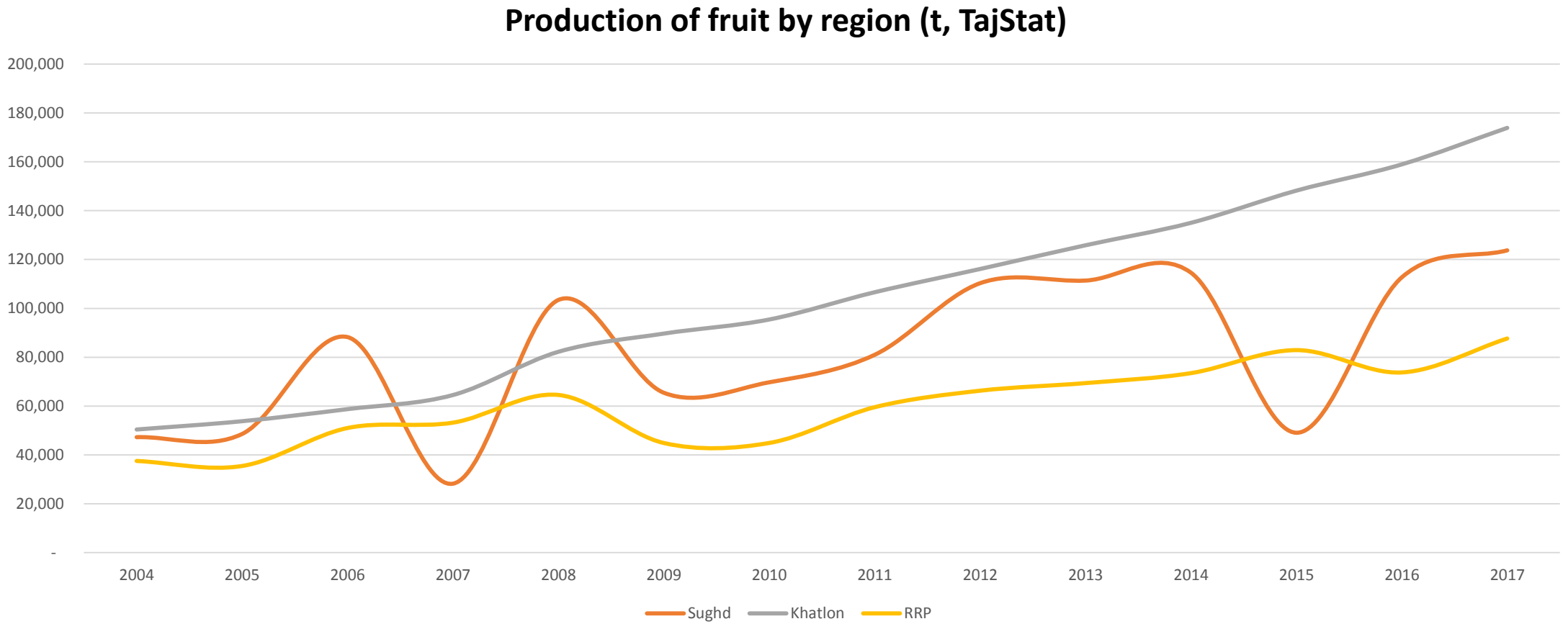
Dekhan farms are also the driving force for fruit. They control 62% of acreage and generate 44% of output as most of their orchards are rather new. Household plots still generate 52% of output with 23% of acreage



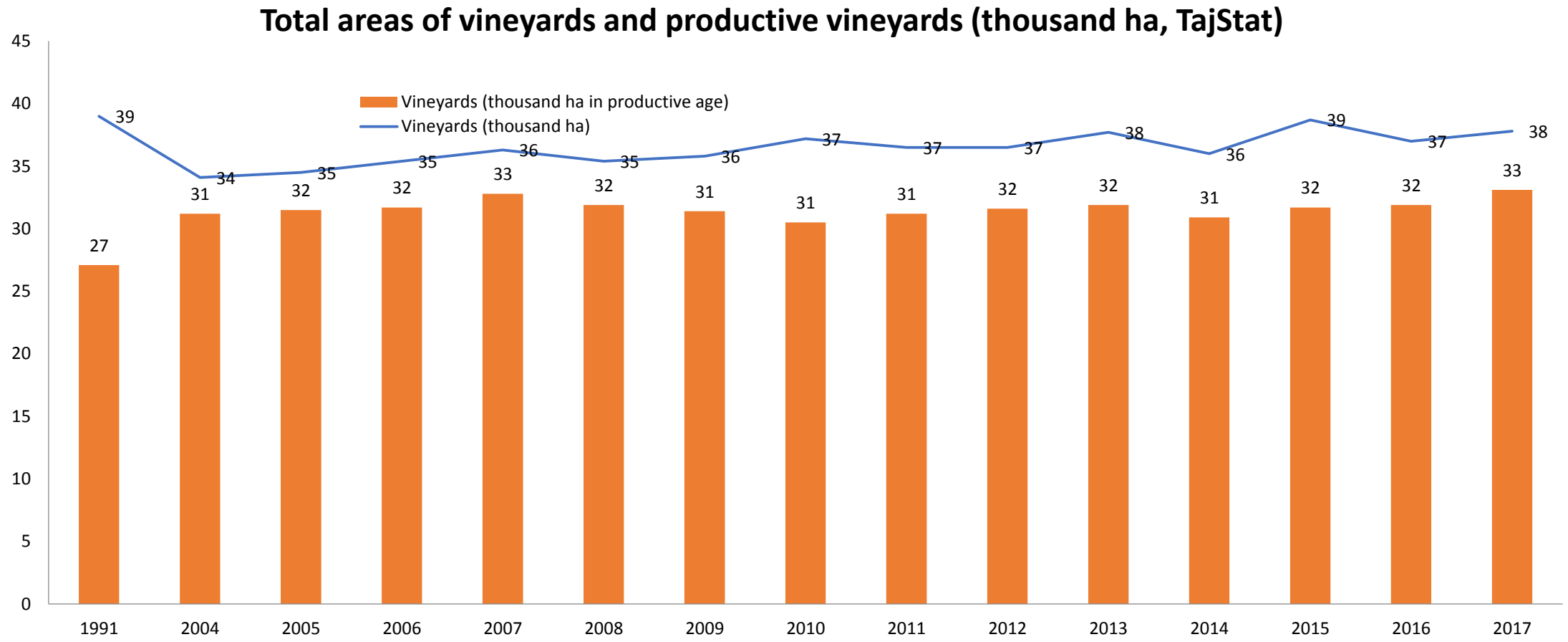
44% of orchards are located in Sughd with only 31% of volume output as they are often made of low yield apricots. Khatlon generates 43% of output with 32% of acreage. Its mountainous areas together with Rasht valley in RRP are particularly fit to the cultivation of pome fruit (apples, pears). 97% of fruit processing (canning, dry fruit) is concentrated in Sughd



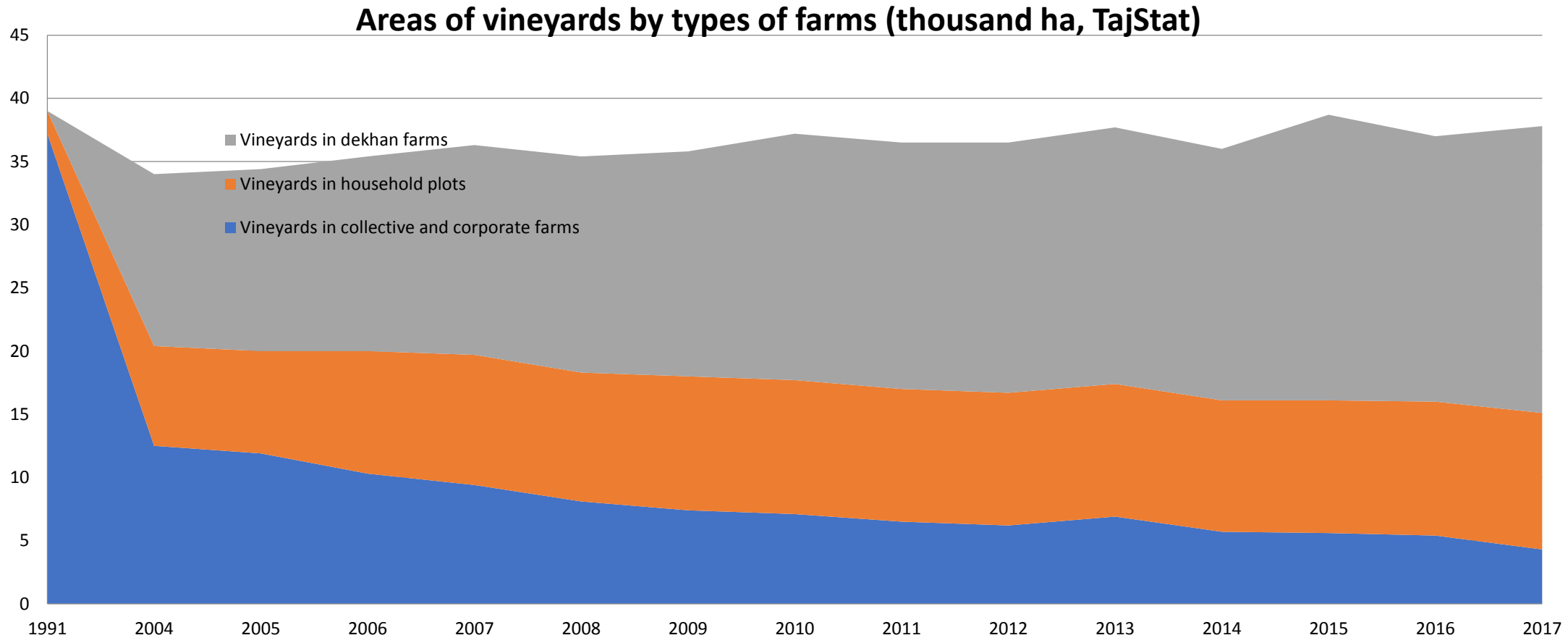
The resilience of Khatlon and to a lesser extent RRP to cold waves coming from the North (Siberia) is much bigger than in Sughd as those regions are protected by a shield of very high mountains. It explains why their yields are more stable than in Sughd. With Climate change and early and perilous blossoming of trees at the end of winter, this resilience factor will become even more important in the future



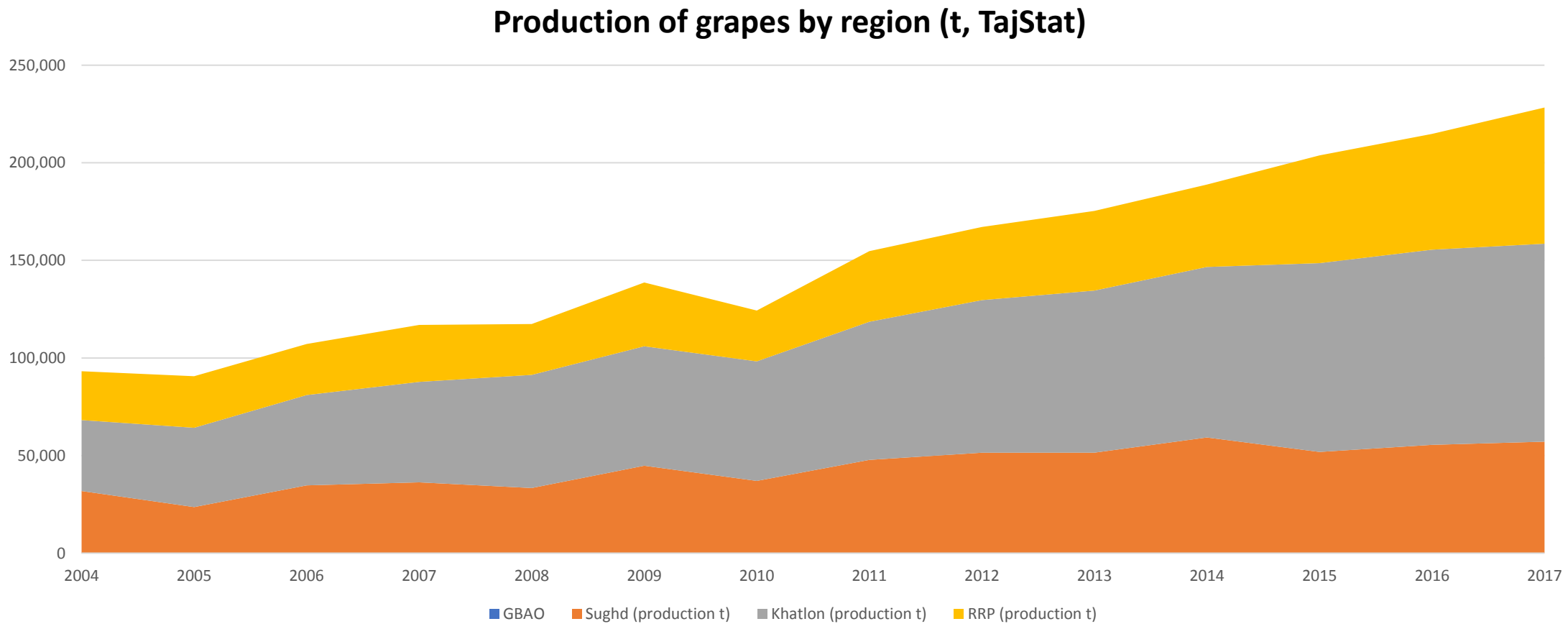
Areas dedicated to vineyards have not increased much since FSU and most of them are made of productive vineyards for table grapes and raisins. As vineyards are well adapted to slopes and water efficient, acreage could increase substantially without putting negative pressure on limited resources of arable land and water



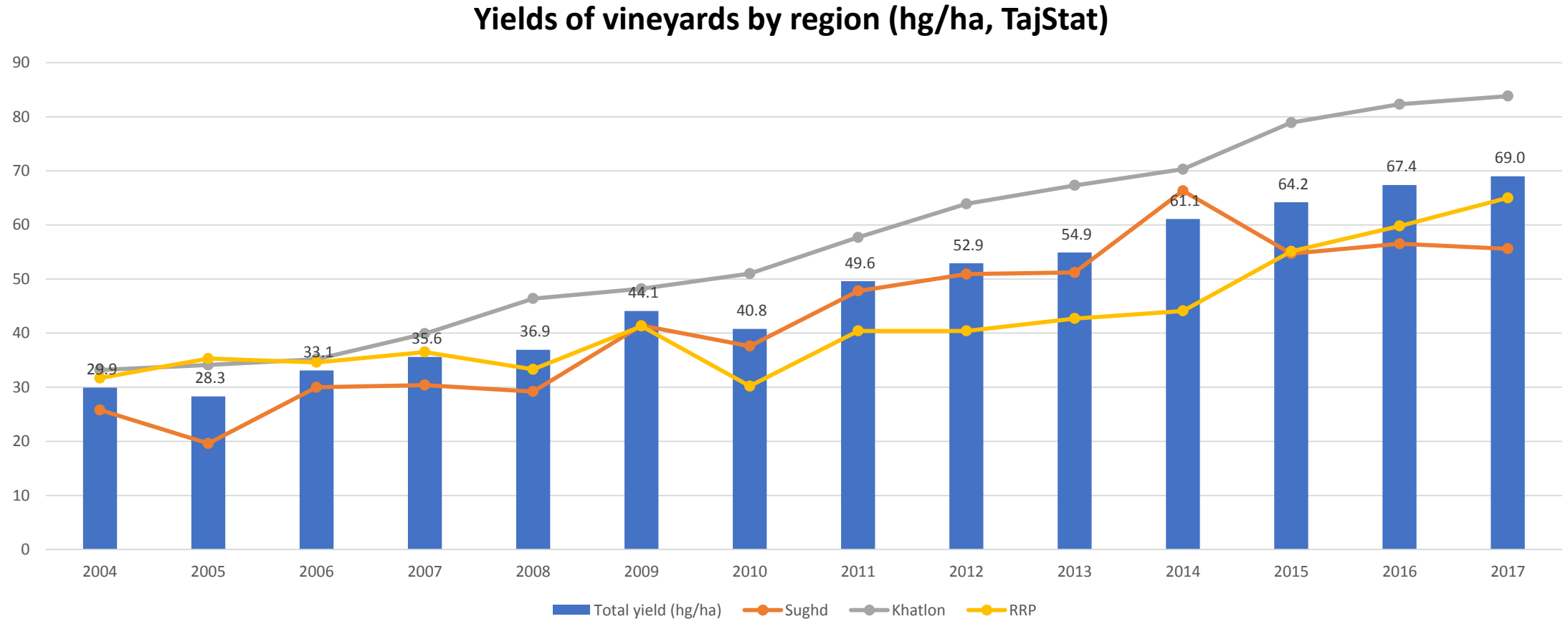
As for other high value fruits and vegetables, Dekhan farms are now the leading player. They control 60% of acreage but generate only 29% of output while households generate 50% of output on 29% of acreage. This productivity gap reflects the fact that fields of Dekhan farms are often rainfed and on slopes



Once again, Khatlon is becoming the key region with 44% of output for 36% of acreage, against 31% of output and 23% of acreage in RRP, and 25% of output and 31% of acreage in Sughd



Yields of vineyards have more than doubled since FSU and are particularly high in Khatlon. Even though yields are already 73% of those of Turkey, there is still a large upside potential if modern drip irrigation technology was used systematically. Drip irrigation can in particular allow for a massive increase in the cultivation of slopes, with positive side benefits in terms of sustainable land management and fight against erosion

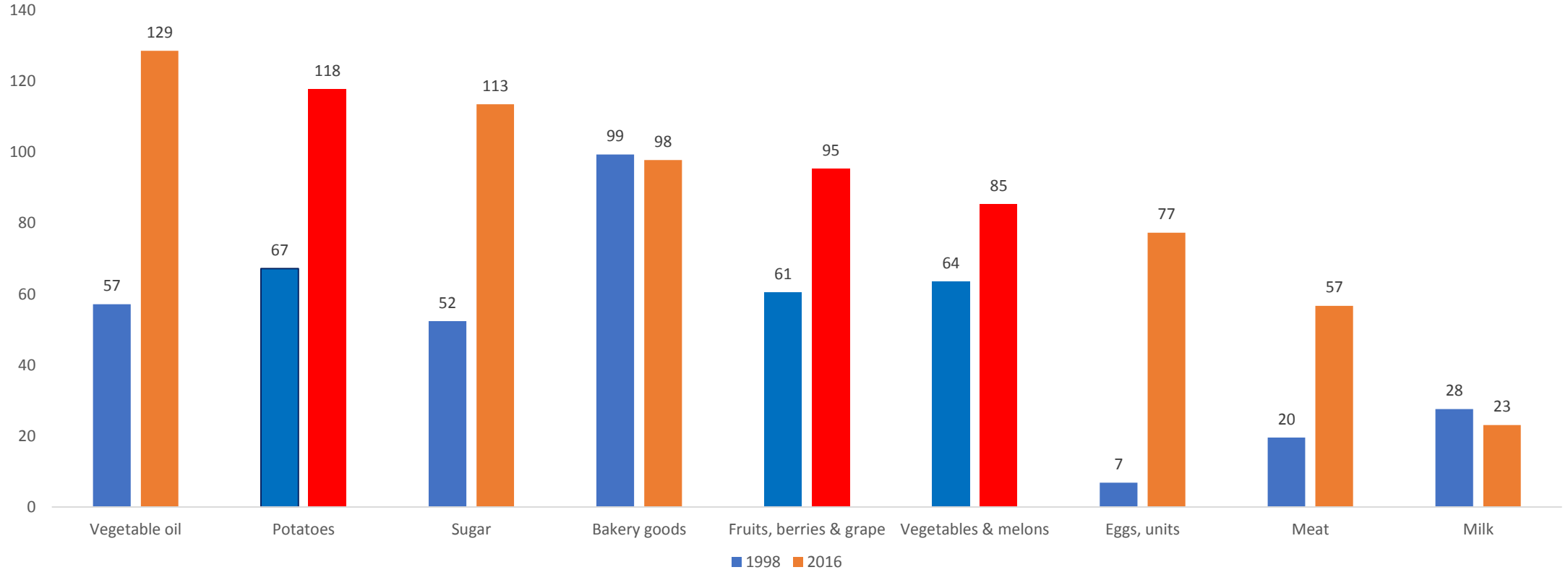


Prospects for development

Towards a better mobilization of the pull force of the domestic and foreign markets

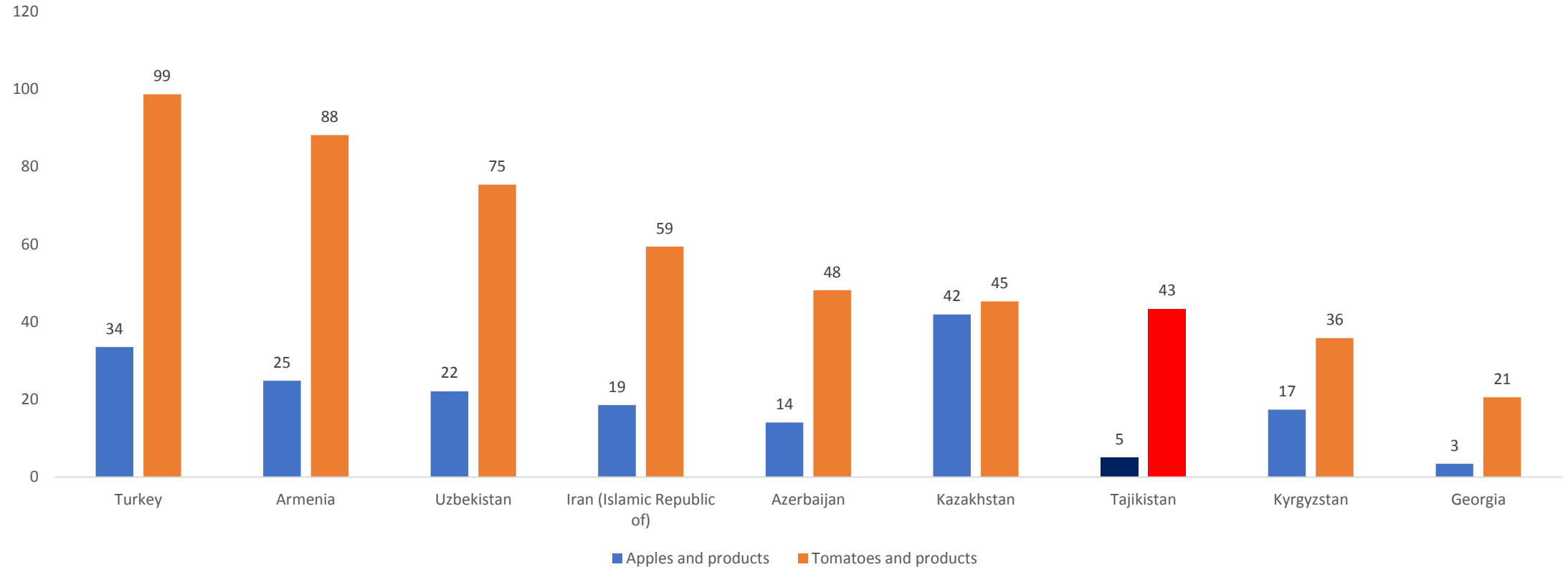
In 2016, consumption per capita of potatoes is much higher than in FSU, and that of fruit has nearly recovered former levels thanks to strong increase in household income in the last two decades. Consumption of vegetables and melons is still slightly lagging vis-à-vis Soviet levels, but much less than that of meat and milk

Foodstuff consumption per capita (kg, 1991=100, TajStat)

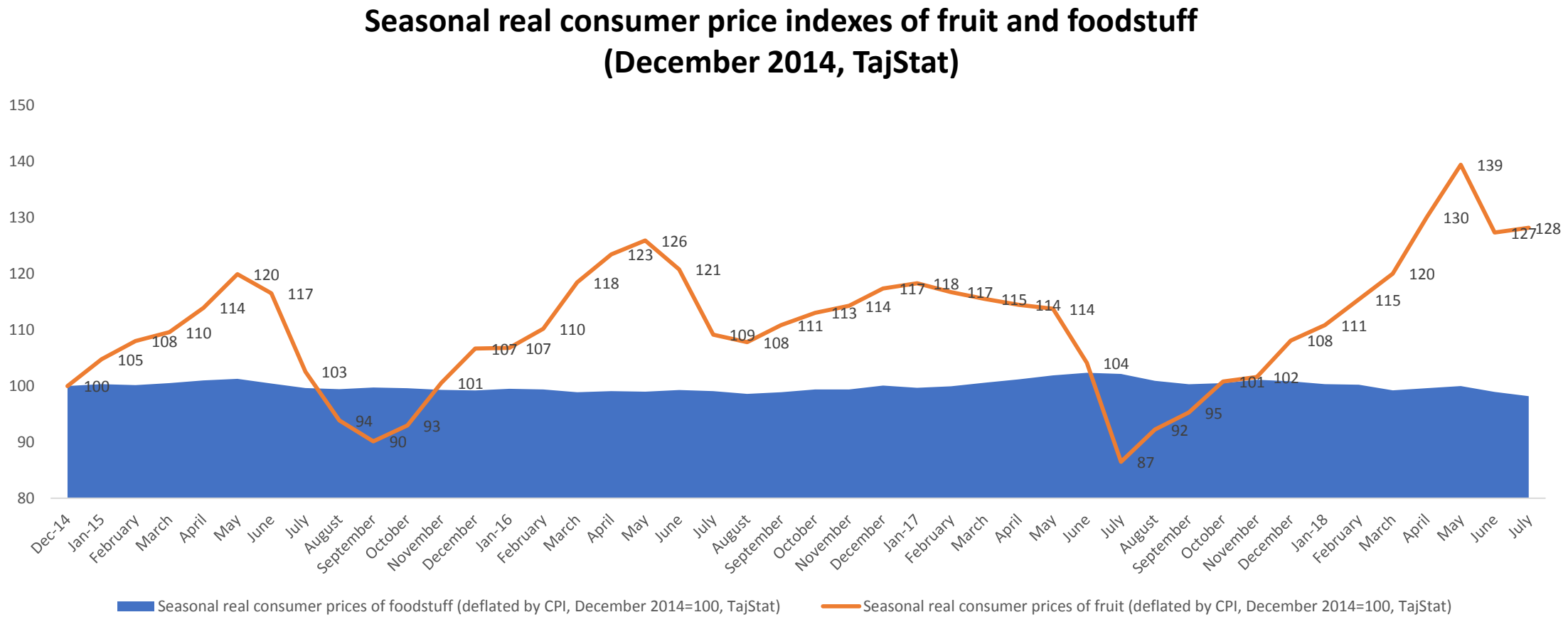


Compared with Silk road countries which share many food consumption patterns, Tajikistan has still a rather low level of consumption of key staples such as apples and tomatoes. Data from FSU and regional neighbours therefore show that there is still good potential for increase in per capita consumption of fruit and vegetables

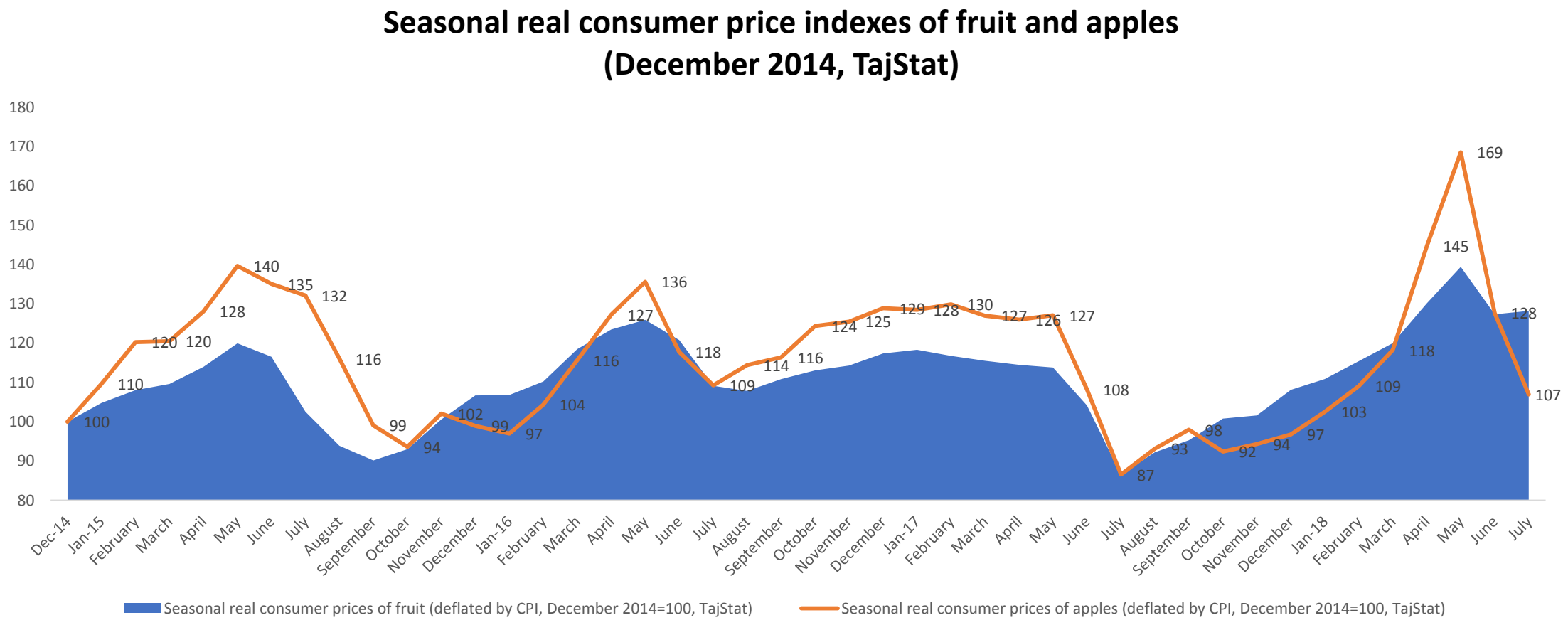
Consumption per capita in 2013 (kg, fresh product equivalent, Faostat)



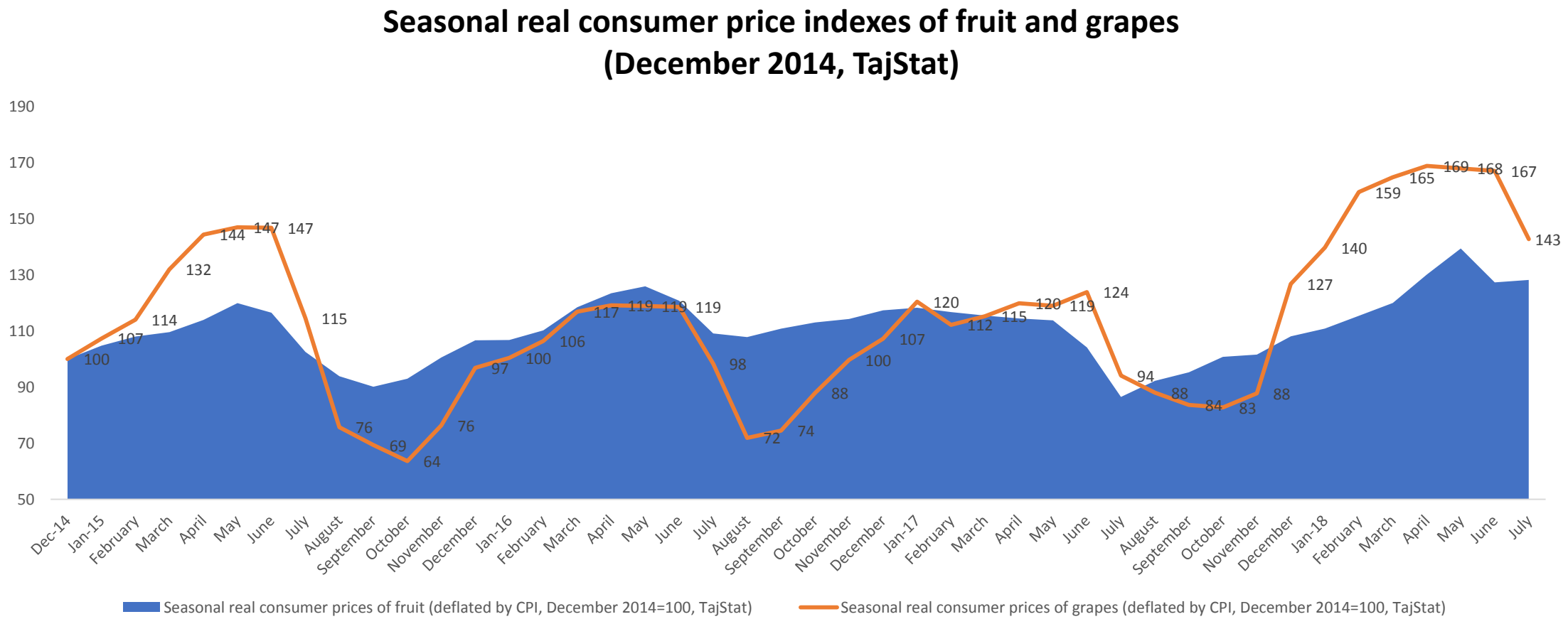
One of the main deterrents to higher consumption of fruit today is the huge price seasonality. From July 2017 till May 2018 for instance, real consumer prices for fruit (deflated from CPI) increased by 60%, even though some imported fruits like bananas remain rather stable



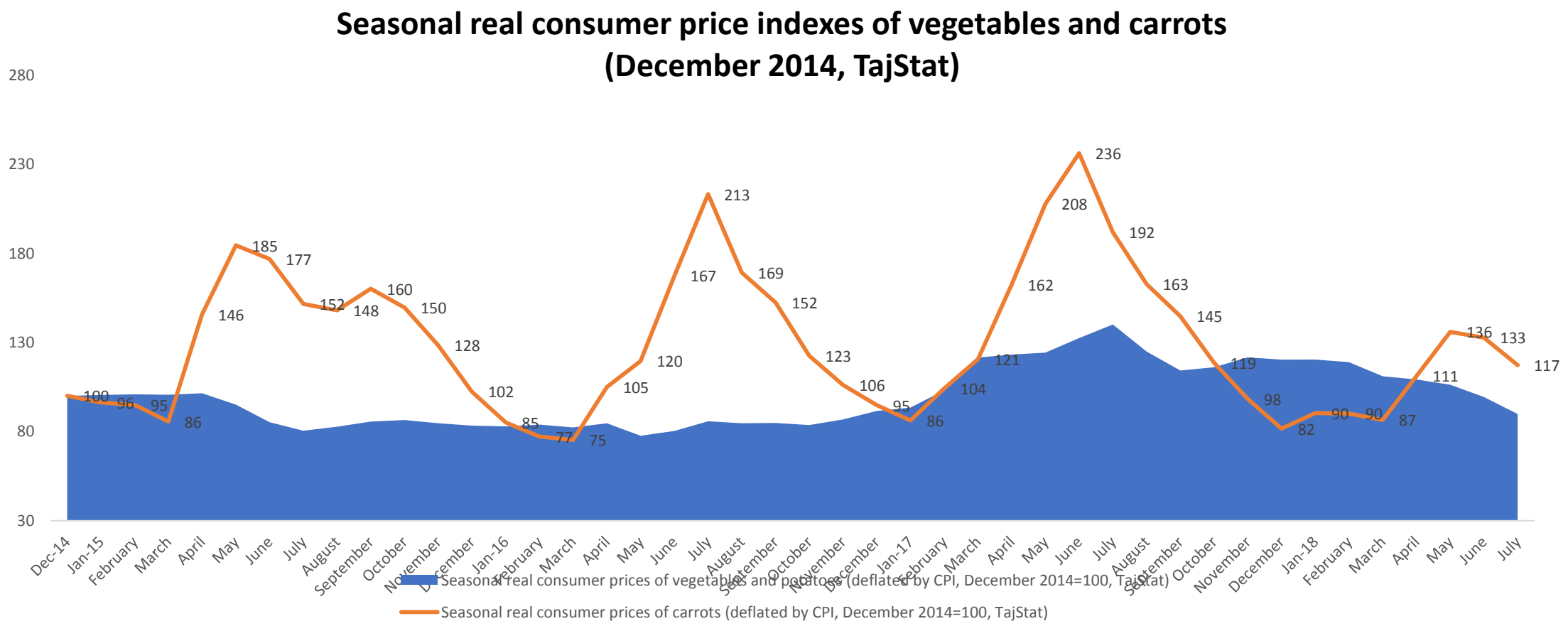
For apples, the seasonal gap was even bigger with a 94% increase



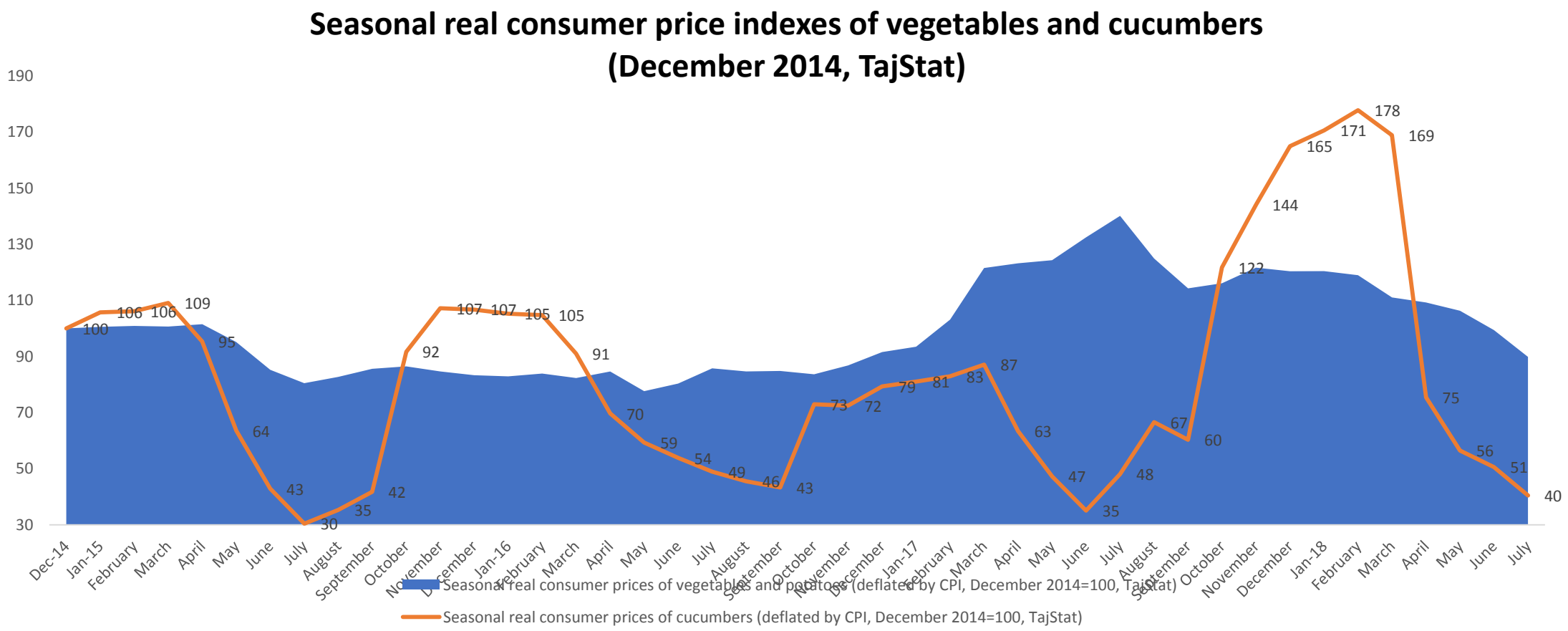
For grapes, there was also a 103% increase in a period of only six months



A similar pattern of extreme seasonal cycles can be found for vegetables like carrots



Cucumbers…


Seasonal real consumer price indexes of vegetables and cucumbers
(December 2014, TajStat)
190
170
150
130
110
90
70
50
30
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February
March
April
May
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July
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September
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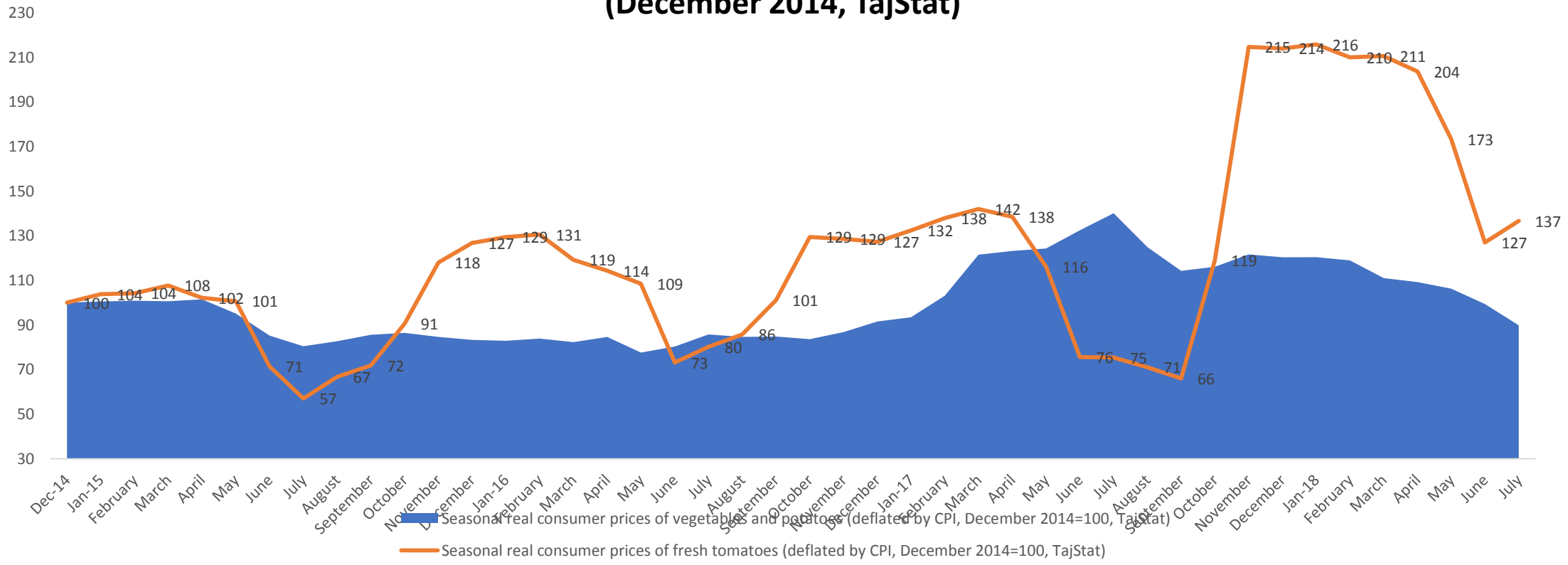
51
40
Seasonal real consumer prices of vegetables and potatoes (deflated by CPI, December 2014=100, TajStat)
Seasonal real consumer prices of cucumbers (deflated by CPI, December 2014=100, TajStat)

Or fresh tomatoes and many other vegetables...

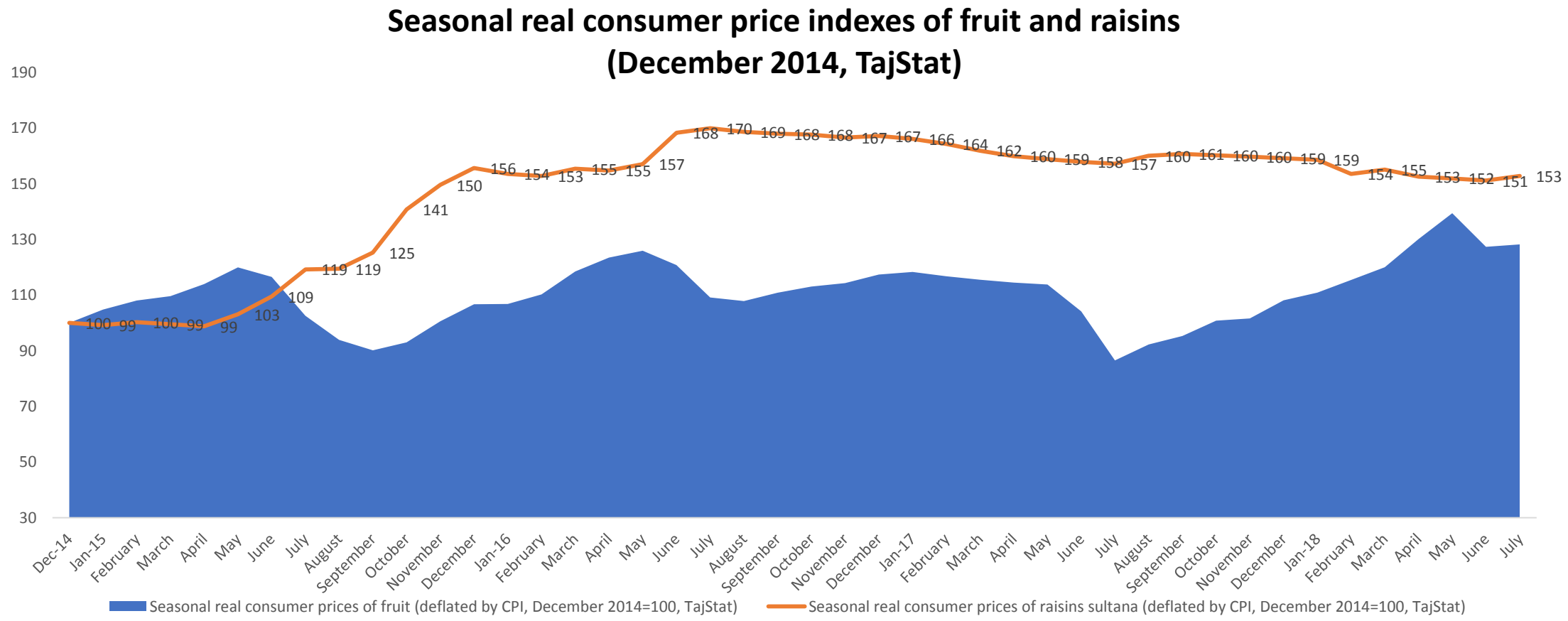
Extreme and constant seasonal instability in prices is both hampering better food security on the side of consumers as they are unable to afford high prices in peak time, and on the side of producers as they are often selling their products at rock bottom prices just after harvest for lack of alternatives

Seasonal real consumer price indexes of vegetables and fresh tomatoes (December 2014, TajStat)

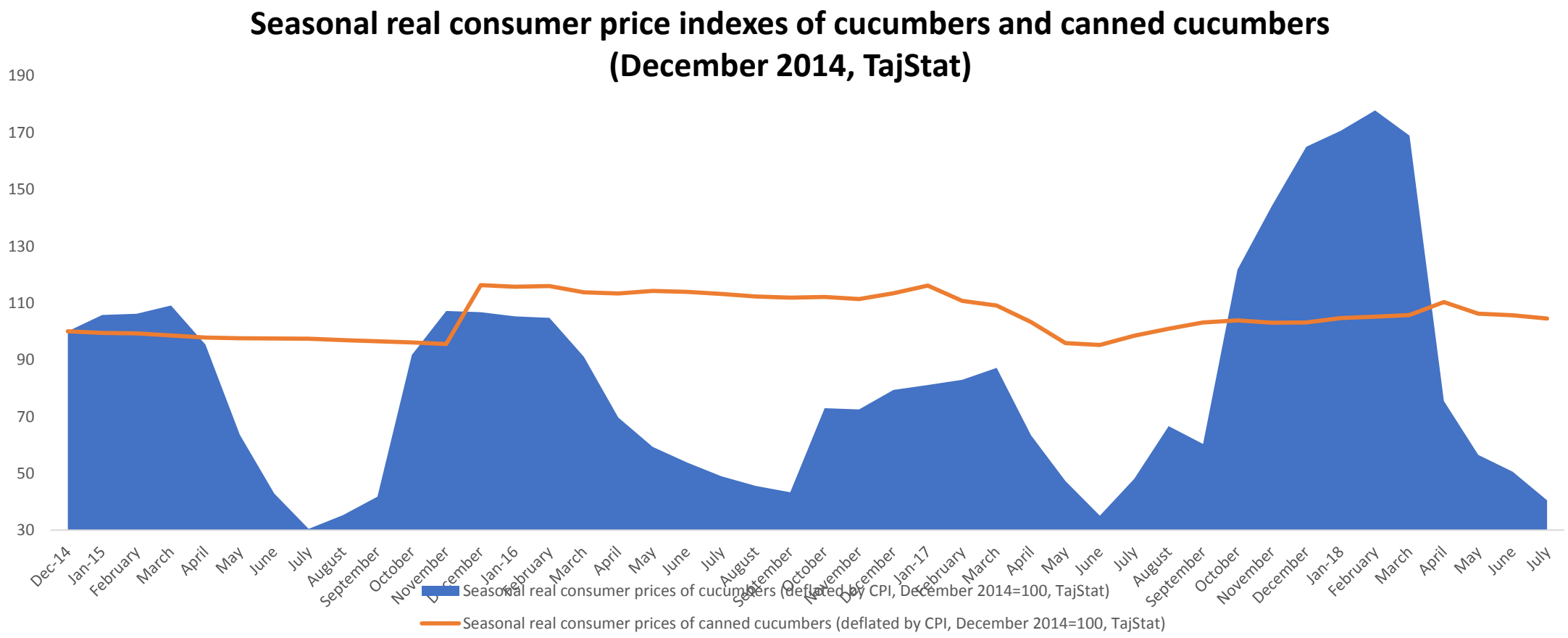


For farmers to get better prices at harvest time and consumers at peak time, there is a need for structural change at post harvest level. It should first include better access to modern storage capacity and finance for storage (warehouse finance). Today, modern storage such as in Gissar Sitabr Agro 2,000 t refrigerated capacity and 1,000 t Ultra Low Oxygen capacity remains an exception

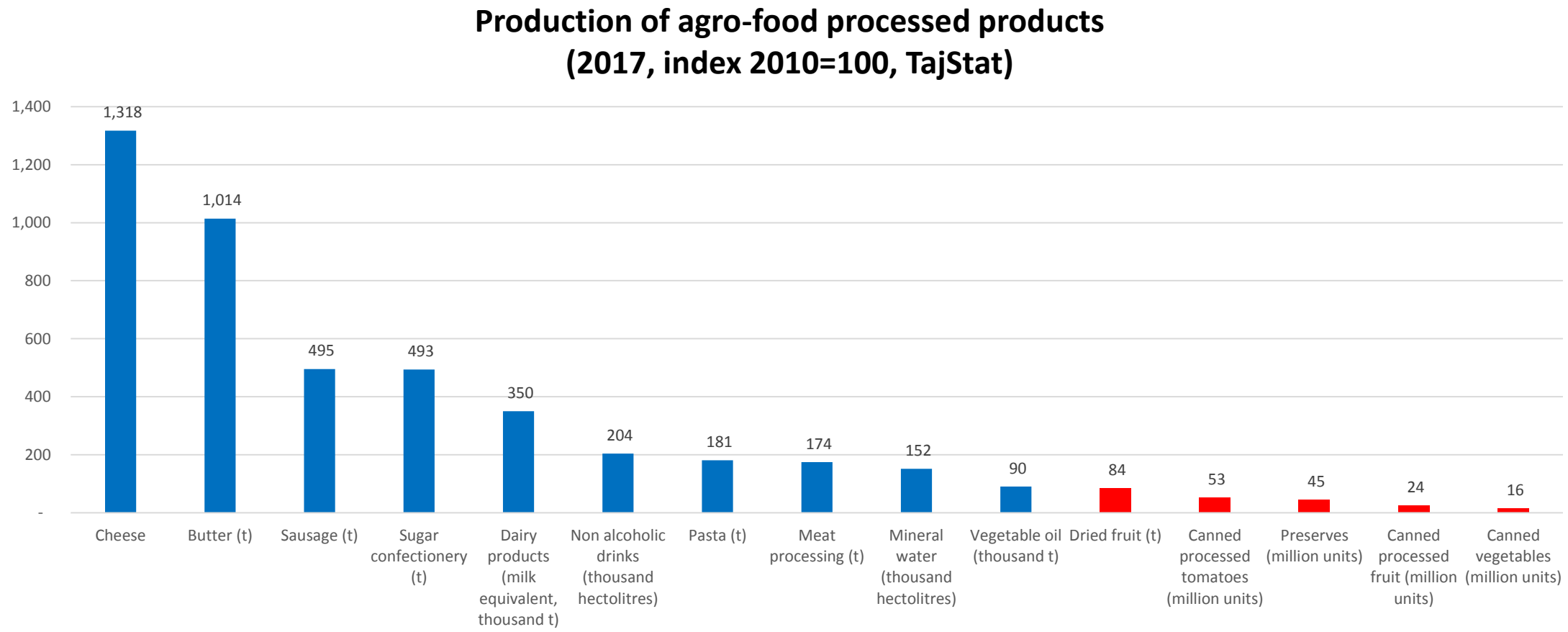
A second way to improve prices for farmers is to better develop drying of fruit after harvest, beyond the sole apricots and raisins, as prices of dried fruit are not submitted to seasonal cycles



Or alternatively, to better develop the processing and canning industry which ensures long and efficient storage of fruits and vegetables

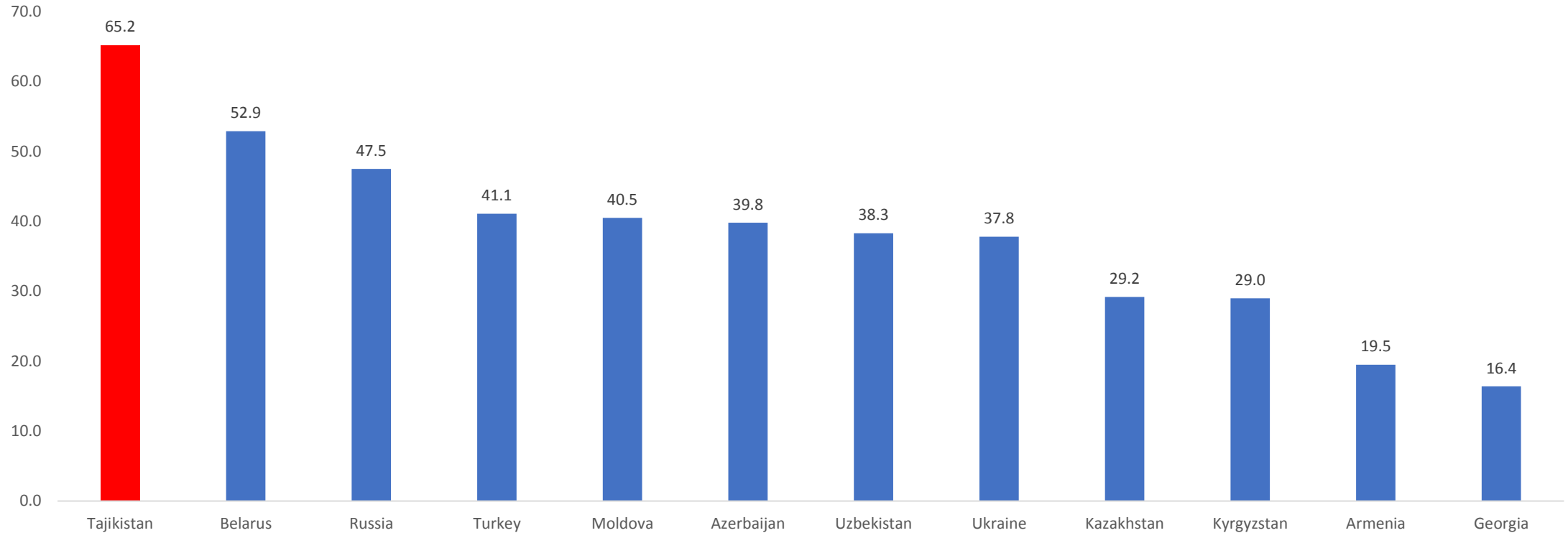


Increased development of drying and processing, especially in Khatlon region, is therefore a critical factor. Unfortunately, there has been deep contraction of officially registered agro-industrial output in fruit and vegetables since the beginning of the decade

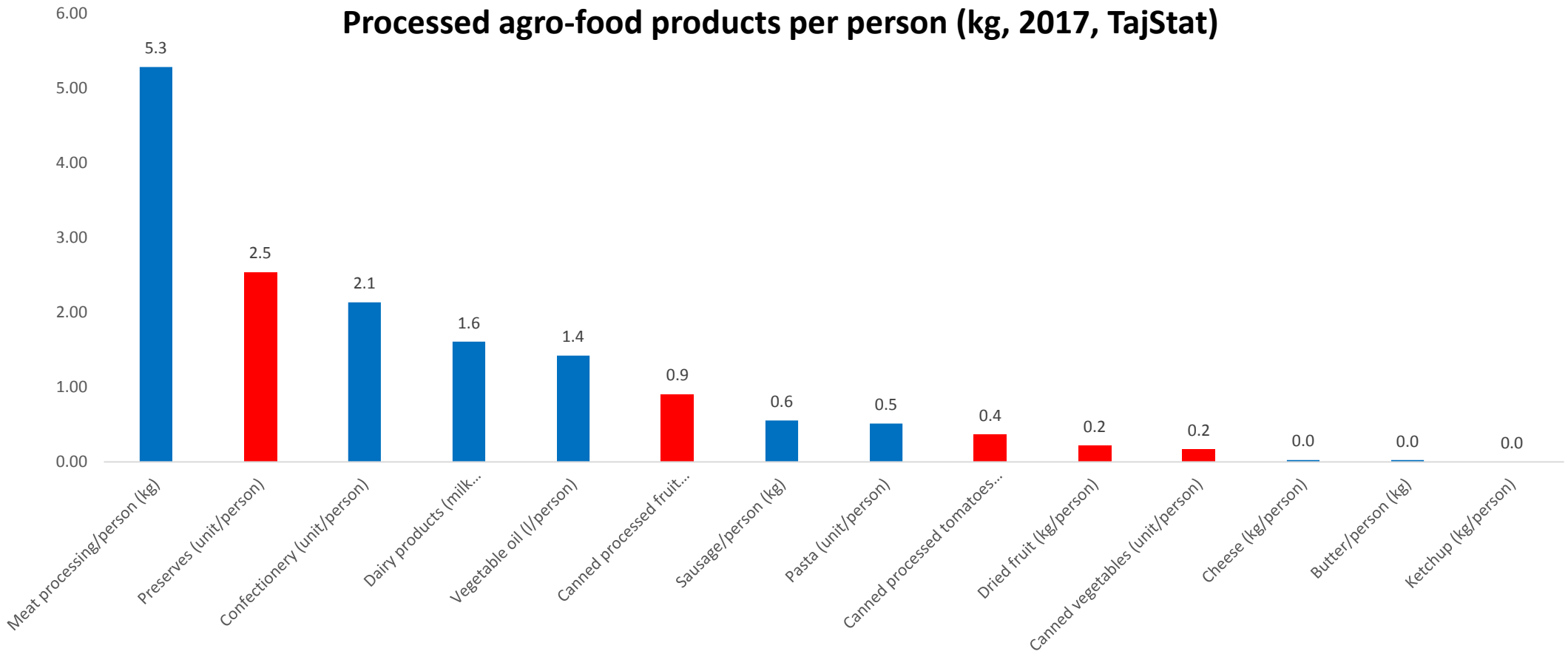


The main explanation for the contraction in processed output of fruit and vegetable is tax differences: Today, while formal firms in processing and retail pay the highest taxes in the region according to the WB, including 18% VAT on sales, informal/small players in the Bazaar pay very little of them, if any

Total Tax and Contribution Rate (% of firms income, WB & PWC, Paying taxes 2018)



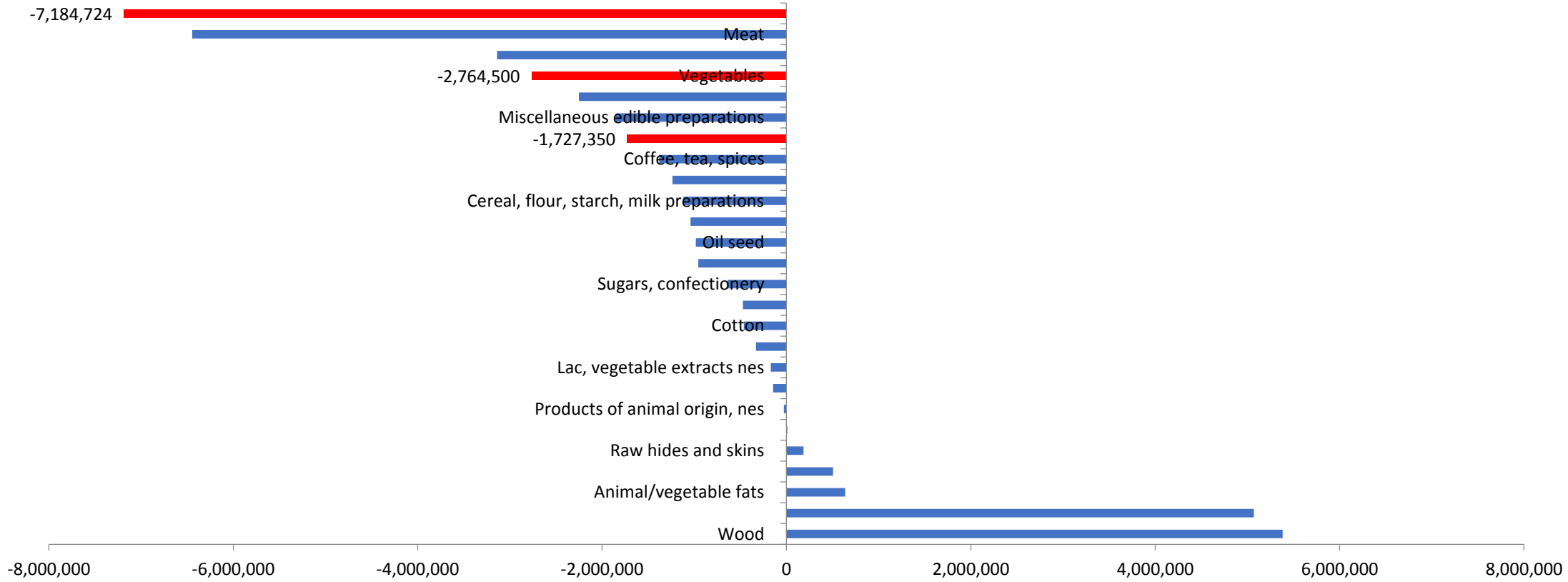
For that reason, official figures of output of processed fruit and vegetables are just miserable: 0.9 unit of canned processed fruit per capita, 0.4 unit of canned processed tomato, 0.2 kg of dried fruit, 0.2 unit of canned vegetable!



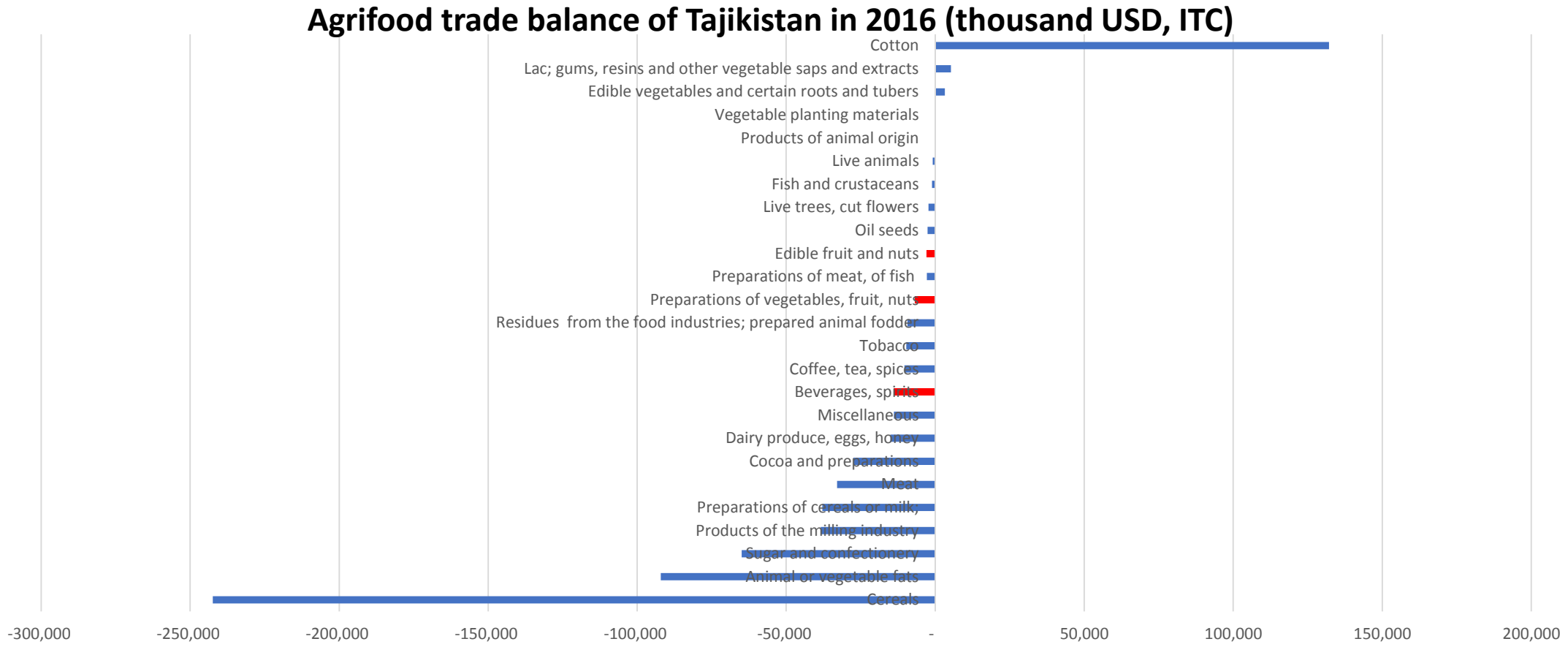
Apart from their negative impact on volumes of fresh fruit and vegetables industrially processed, tax differences prevent the full emergence of modern retailers which are needed to organize value-chains based on international standards for food safety including full traceability of products. Eventually, the main loser in this situation are the tax authorities themselves as they cannot tax income from the grey economy and get limited income from SMEs which benefit from a special tax treatment if their income is less than 80,000 TJS

If Tajikistan had a better post-harvest system, with real development of formal processors and modern retailers, it could be on a stronger footing to benefit from the pull force of the Euroasia Customs Union which, prior to the Russian embargo of 2014, had a trade deficit for fresh and processed fruit and vegetables of nearly 12 bn USD!

Euroasia Customs Union (ECU) 2013 (agri-food trade balance, source ITC)



Instead of being a large net exporter of fresh and processed fruit and vegetables, notably to neighbour Euroasian countries, Tajikistan is today a net importer. Tajikistan has been accumulating large trade deficits in agri-food despite having two-third of its workforce involved in the sector and having experienced strong GAO growth



The way ahead: conclusive recommendations

What has to be done? Tax system and modern value-chains

- Tax differences between large scale modern agro-processors and retailers on the one side, and informal or micro distribution channels on the other side are today one of the main bottlenecks in the development of a modern post-harvest system for agricultural products and fruits and vegetables in particular
- Tax differences have led to the contraction of output of officially registered agro-processors and are putting at risk the development of modern retail needed for the efficient organization of value-chains
- Tax differences lead to lower tax receipts for the State as most fresh products are sold informally
- We suggest to consider a reduction of the VAT tax rate paid by formal processors and retailers on fresh agricultural products from 18% to 6%. This would put VAT payers on a closer footing with SMEs of the Bazaar with declared annual revenue of less than 500,000 TJS which benefit from a 6% flat tax rate on non productive activities. A similar system of reduced VAT on fresh food is used in many countries, including in CIS countries. Tajikistan has also adopted recently a 0% VAT tax rate on inputs used by the poultry sector
- Reduced VAT should only apply to fresh products at this stage as a large part of processed or frozen products are currently imported and are paying VAT at customs clearance, generating therefore no tax differences

What has to be done? Better access to modern technologies

- Thanks in particular to projects supported by development organizations such as EU ECTAP, Tajikistan is being reconnected with modern technologies
- Modern intensive orchards have been introduced by a former EBRD/EU project, TAFF, and are now being supported by technical assistance from ECTAP
- Large work still needs to be implemented to promote on a larger scale modern water efficient systems (drip irrigation and pressurized irrigation) and energy efficient modern greenhouses
- With these technologies, especially drip with compensation of pressure, it is possible to use hilly and mountainous areas for which there is ample available space, and slopes, for the development of orchards and vineyards. This could lead to very large increase in output while contributing to the fight against land erosion
- Development of fruit and vineyards in hilly areas could take advantage of the massive investments made in Soviet times for terracing of thousands of ha, especially in Khatlon region

What has to be done? Develop a stronger export capacity

- Even though its official exports of dried apricots have collapsed from USD 12 million in 2014 to only USD 5 million in 2016 (against USD 289 million for Turkey), Tajikistan is still the 9th biggest exporter of this product. Subject to adaptation of the tax system, to technical improvement all along the value chain and to better food safety currently actively promoted by the National Committee for Food Security, it could increase its share of this dynamic market
- An improved tax environment could also play a positive role for consolidators-exporters for products such as onions, carrots or grapes for which post harvest prices are particularly low. This would greatly help reduce seasonal price gaps
- While it will take ages to compete with leading global exporters for standard fruits and vegetables, Tajikistan should also invest in the promotion of its unique biodiversity and promote rare varieties which could carve their niches in international markets. Organic products could in particular be a target

Thank you for your attention

ECTAP
ENHANCED COMPETITIVENESS OF TAJIK AGRIBUSINESS PROJECT