



Workshop on Horticultural Value Chains Development
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Horticulture value Chain Analysis Georgia

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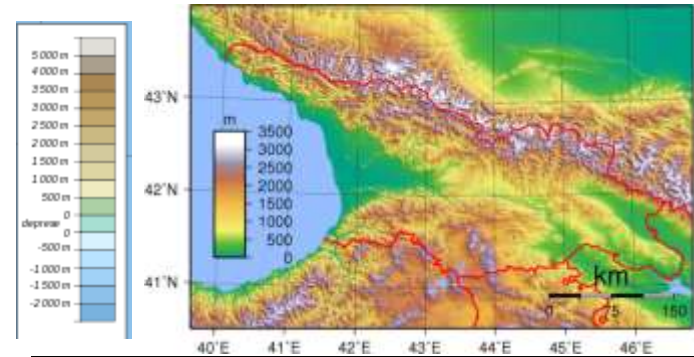
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Georgia

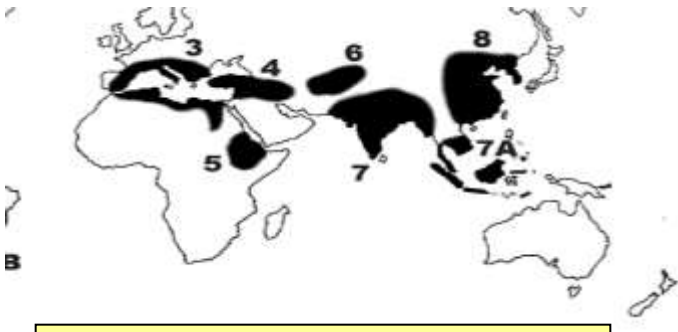


location of Georgia



Topography map of Georgia

- Georgia is located in the mountainous South Caucasus, between of the Black sea and Caspian sea.
- Country has very varied topographies and soils and lies between of major and minor Caucasus mountains.
- Georgia is considered included into **IV group** of Plants origin (Vavilov) – Southwest Asia



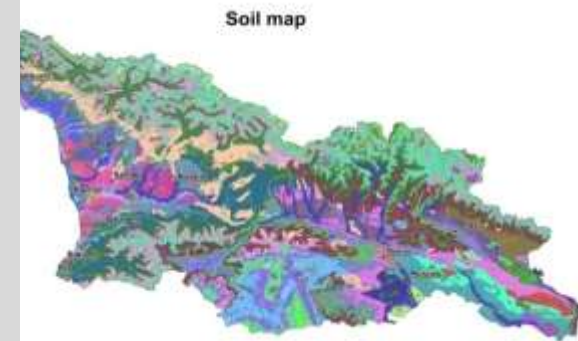
Centres of plant origin



Soil map of Georgia

Agriculture and Horticulture of Georgia

- 49 types of soil and 22 microclimate zones;
- Climatic zones from subtropical to semi arid and arid
- The Black Sea coastline 315km
- Rich renewable water resources:
860 lakes, 45 reservoirs, 26 000 rivers;
- 33 % of territory is covered by forests
- Extended growing seasons (both early and late).



Diversified high value cash crops:



Grapes with up to 500 autochthonous varieties ;



Greenhouses;



Wide variety of Fruits and vegetable (both early and late);



Nuts;



Special tea for high margin markets;



Greens;



Citruses;



Dairy Products.

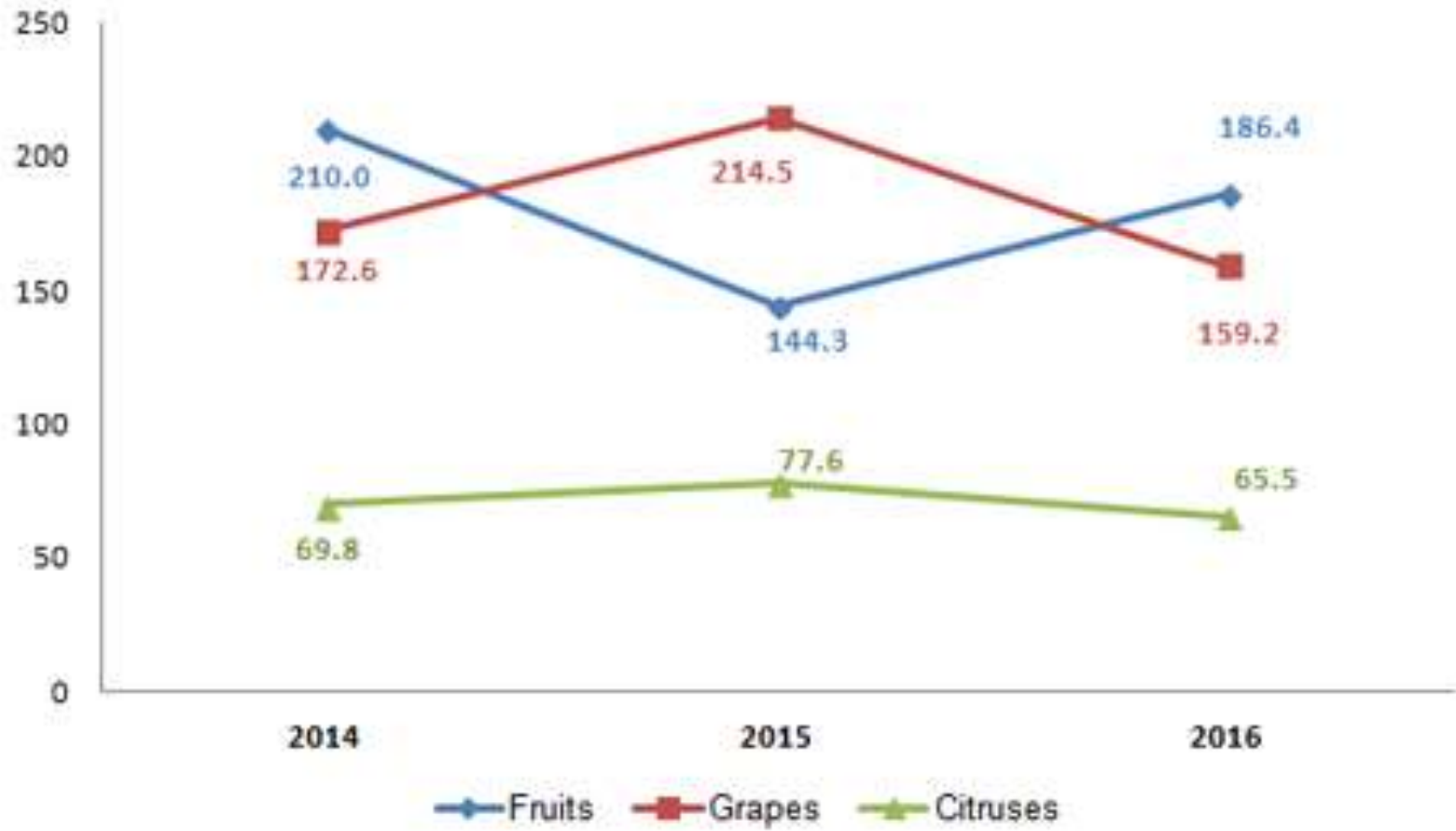
Horticulture main production regions in Georgia



- Shida Kartli
- Kakheti
- Samegrelo
- Samckhe - Javakheti



Fruit production in Georgia, 2014 – 2016, 1000 T



Vegetable production in Georgia, 2015 – 2016, 1000 T

- **TOTAL vegetable productions – 141 300 (2015) – 152 600 (2016)**
 - Tomato - 58 300 (2015), 54 600 (2016) -
 - Cucumber – 22 100 (2015), 18 700 (2016)
 - Cabbages - 21 400 (2015), 19 700 (2016)
 - Onions - 12 800 ha
- Vegetable plantations – 18 000 -20 000 Ha (2015-2016)
- **TOTAL Melons, Watermelon production – 72 500 (2015), 72 800 (2016)**
 - Plantations: 3 400 -3600 ha (2015-2016)

Fruit production by crops

Production of parrenial crops in Georgia
(ths. tons)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fruit, total	153,3	227,5	157,6	181,2	124,1	187,3	157,9	217,6	210,0	144,3	186,4
Of which:											
Apple	32,8	101,3	41,5	80,7	21,1	64,3	45,0	68,6	82,3	25,7	65,2
Pear	22,5	19,6	16,4	11,1	13,7	17,6	16,1	17,0	14,2	11,6	10,7
Quince	1,1	1,5	1,2	2,2	0,5	0,9	0,9	2,1	0,8	0,5	1,2
Plum, prune and damson	12,8	16,3	12,6	6,3	6,7	7,2	10,7	8,7	13,1	4,5	8,5
Cherries	4,8	5,5	4,0	4,0	3,0	2,7	5,1	5,6	5,4	2,5	3,7
Apricot	0,5	0,3	0,7	0,2	0,8	0,3	0,7	0,7	1,0	0,7	1,5
Peach, nectarine	5,3	8,2	13,7	17,6	6,9	19,1	7,1	23,7	24,9	23,1	33,3
Of which:											
Nectarine	...	...	...	...	...	...	...	...	...	...	5,9
Sour plum, cherry plum	24,3	18,6	18,0	6,9	11,9	9,7	13,7	10,3	8,4	10,9	9,5
Walnut	3,9	11,8	6,2	8,2	6,1	5,7	4,8	10,8	4,2	5,6	3,6
Hazelnut	23,5	21,2	18,7	21,8	28,8	31,1	24,7	39,7	33,8	35,3	29,5
Subtropical fruit	21,2	22,1	23,7	21,4	22,4	25,3	26,2	27,8	20,1	21,4	15,8

Source: Geostat, 2017

Fruit orchard acreage In Georgia

- 1917 - 32 000 ha
- 1945 - 88 345 ha
- 1965 - 129 522 ha.
- 1979 - 154 600 ha
- 1986 – 145 000 ha
- 2004 - 48 000 Ha
- 2014 - 54 000 Ha

Export of fruit and nuts, 2016

- Hazelnut – 173.0 mln USD
- Mandarins – 10,8 mln
- Peach - 2,8 mln USD
- Persimmon – 1,82 mln USD
- Apples - 0,420 mln USD

Source: Geostat, 2017

Traditional use of horticulture products

- Fresh fruits
- Dry fruits
- Jams
- Muraba,
- Tklapi
- Churchkhela
- Gozinaki
- Candy
- Purée,
- Juices,
- Fruit wine and fruit vodka
- Surrogates for a tea – used different crops type bilberry



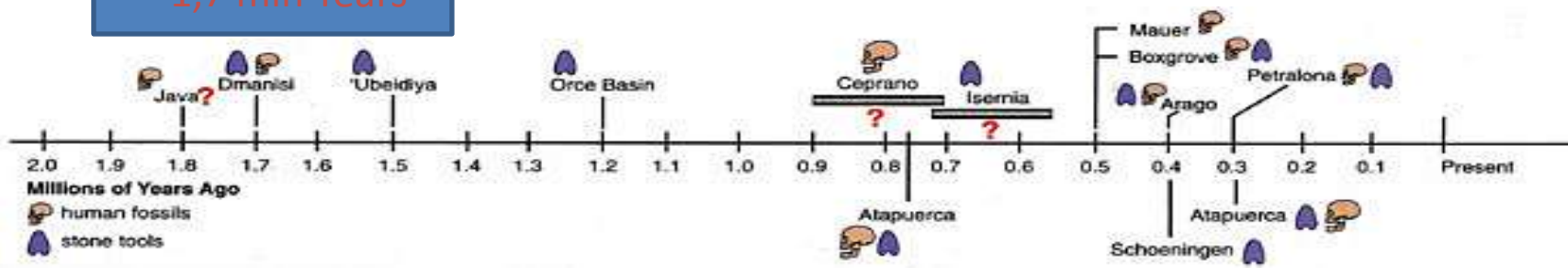
The local species of the fruit crops

- Georgia is belongs to one of the center of origin following fruit crops:
- Hazelnut, Chestnut, Apples, Quince, Medlar, Pears, Prunus cerasifera, Prunus domestica, Prunus avium, cornus mas, and other fruit and berry crops has local wild relatives

History of horticulture in Georgia

- The Archeological evidences has proved that in Georgia In period of the Upper Paleolithic - late stone Age (50 - 10 ka BC) people was used pear and other fruits for consumption – Deviskhvreli, Sakajia (West Georgia) (Pavliashvili, 1971).
- In Georgia was found a various agricultural-horticultural tools (pruners, knives) and seeds of peach (*Pr. Persica*) and Snowball (*Viburnum opulus L*) in archeological samples of the Bronze Age (Javakhishvili, 1956).

- **DMANISI, Georgia**
– 1,7 mln Years



The basic Horticulture crops for Georgia

- Apple – Shida Kartli, Samckhe -Javakheti
- Peach - Kakheti, Shida Kartli
- Hazelnut – Samegrelo, Guria, Kakheti
- Tkemali (pr.Cerasifera) - Imereti
- Pear – Shida Kartli, Imereti
- Mandarins – Ajara, samegrelo, Guria
- Culinary herbs – Imereti
- Tomato, cucumber – Shida qartli, Qvemo qartli

The main crops of Georgia

1 Hazelnut

- Hazelnut is one of the oldest, traditional local nut crop in Georgia.
- Production of Hazelnut is important source of income for population.
- Georgian varieties of hazelnut is distinguished with high agricultural technological properties and it is a significant export raw material.
- Due to increased consumption, it has real perspective of success in the international market.

Hazelnut Orchards in Georgia

	2008 year	2010 year	2012 year	2014 year	2016 year
1. Samegrelo	17, 2	17, 3	18, 5	18, 9	19, 4
2. Guria	6, 2	6, 9	7, 4	8, 1	8, 7
3. Imereti	3, 5	3, 9	4, 2	4, 8	5, 1
4. Kakheti	1, 4	2, 4	3, 1	3, 5	4, 6
5. Achara	0, 5	0, 7	0, 9	1, 8	2, 3
6. The rest regions	0, 7	0, 9	1, 1	1, 7	2, 2

Hazelnut varieties in Georgia

- Basically the local Varieties
- Anakliuri, Nemsa, Gulshishvela, dedoplis TiTi, Atababa, Chkhikvistava and others
- New introduced varieties: Tonda Giffoni -TG, Barcelona, TR, TGDG,



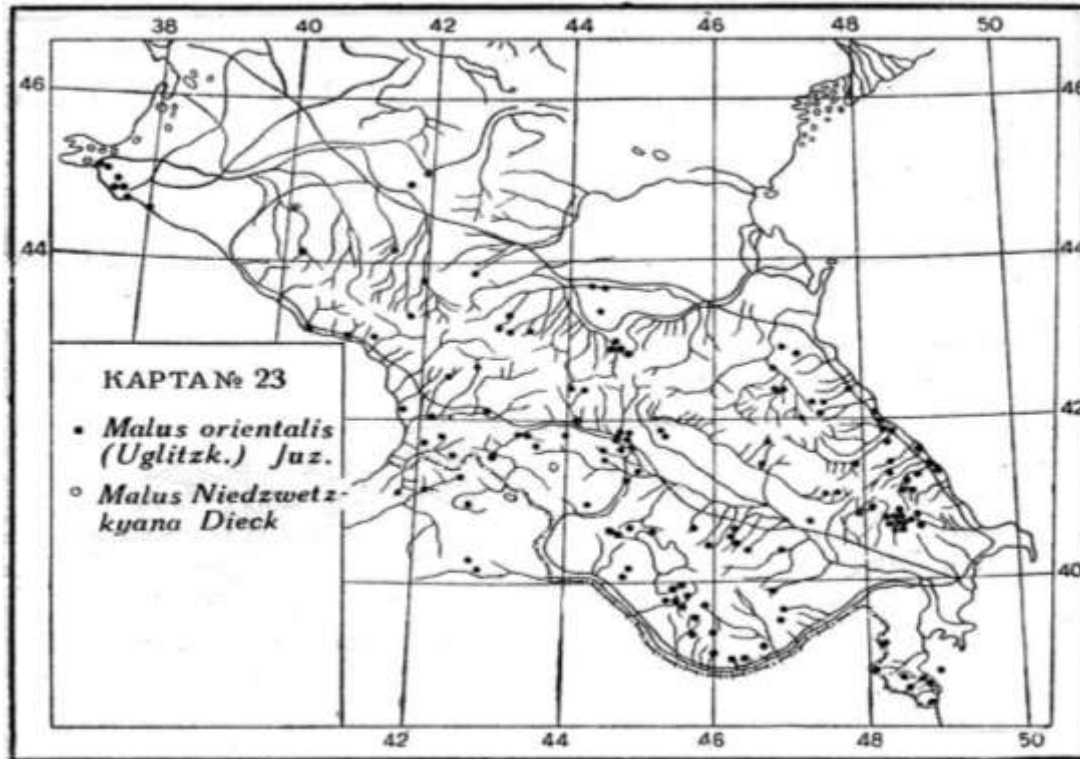
Main fruit crop – Apples

Apple Wild Relatives in Georgia

3 Species of *Malus* in the Caucasus

1. *M. Orientalis* Uglitzk.

1 Species – in Georgia



According of existing information in Georgia are described more than 125 local varieties/ Landraces of Apples, basically these diversity of apples are obtained during centuries by folk selection.

Fig. Spreading of *Malus* Species in the Caucasus (Grossgeim, 1957)

The assortment of Apple cultivars in Georgia

- Comprises the introduced and local varieties. more than 20 cultivars are grown commercially in Georgia.
- Kekhura, winter Banana. Shampaign Renetter, Kartuli sinapi is principal Cultivars in old orchards. more than 50 % of apples
- Golden delicious, Red delicious and Idared in orchards planted for end of XX century
- Golden, Jonagold, Granny Smith, Gala, Fuji, Braeburn, Pinova in new orchards

The main fruit crops of Georgia

peach

Peach basically grows in the East part of Georgia from 400 – 800 m a.s.l., Rainfall – 520 - 800 mm per year,

The Peach production basically is located in East Georgia regions - Kakheti and Shida kartli region.

Major production area: Kakheti, mostly Gurjaani municipality.



Cultivars of peach in Georgia

The variety spectrum of peach and nectarine cultivars are quite broad in Georgia according of harvest period, among them is more spread: Elberta, Vazhuri, Coronet, Golden Jubilee, Canning early, Hale, Uspech, Krimchak, Red Gold, Local peach cultivars.
Harvest is starting from beginning of June till beginning of October

Cv Vazhuri



Cv Elberta



Cv Red Gold



Recent Popular crops – Walnut and almond

- Starting intensively planting since 2015
- Established - 1200 ha lateral walnut orchard
- Established - 300 ha late flowering almond orchards
- Trend - increasing of acreage

Emerging new crops - Blueberry

- Was introduced in 2005
- More than 100 ha planted since 2011
- Trend - increasing of acreage



MoE&A support for horticulture production sector of Georgia

- Project - “Planting of future”
- Starting since Feb 2015
- Supporting of establishment new intensive type of orchards
- Funds for - 70 % of seedlings, 50 % of drip-irrigation
- 20,5 mln Gel
- 4300 Ha of new orchards was planted within of 36 month

Government support for Horticulture sector

- Low percentage long term loans (2-4 % per year)
- Support for improving irrigation systems
- Support in harvest insurance
- Support in cold storage building
- Various programs for mechanization purchase

Challenges in horticulture value chain

- Fragmentation of acreages – Small parcels of land
- Lack of adaptation/elaboration of agro production modern technologies
- Technology transfer
- Lack of Funding
- Cold storage and grading-consolidation sector needs Improving
- Infrastructure development

Support Of international organizations and donors

- EU – Enpard
- USAID
- UN-FAO
- GIS
- Turkey, Japan, Poland, China, Czech, Hungary, Netherland and other Agriculture development Agencies

Fruit and horticulture Research In Georgia within XX century

- A important applied and theoretical research works has been done during XX century and for fruit production improvement in Georgia. The research has been done in almost all direction of fruit production - breeding, Variety evaluation, pruning, fertilization, fruit storage, propagation and other fields of fruit growing.
- Research was lead By Georgian Famous Researchers - N. Khomizurashvili, E. Eristavi, T. Tsertsvadze, G. Badrishvili, L. Lasareyshvili, Sh. Akhvlediani, G. Jomardidze, M. Vardzelashvili, Y. Vasadze, V. Kvaliashvili, P.Kacharava, A. Kacharava and others.

Government research and extension support - Scientific-research center of agriculture

- Established 2014
- Research projects in fruit growing
- Jigaura agricultural station
- Tsilkani agricultural station
- More than 350 fruit varieties
- More than 80 vegetable varieties
- More than 12 fruit tree rootstocks
- about 800 Grape varieties
- about 100 Genotypes of agroforestry and mulberry
- Total 80 ha of field collections
- 11 Researchers in grape, fruits, agroforestry, mulberry
- 4 fields – fruit, Grape, Agroforestry, mulberry
- Fruit lab
- Virus testing lab –ELISA and RT-PCR

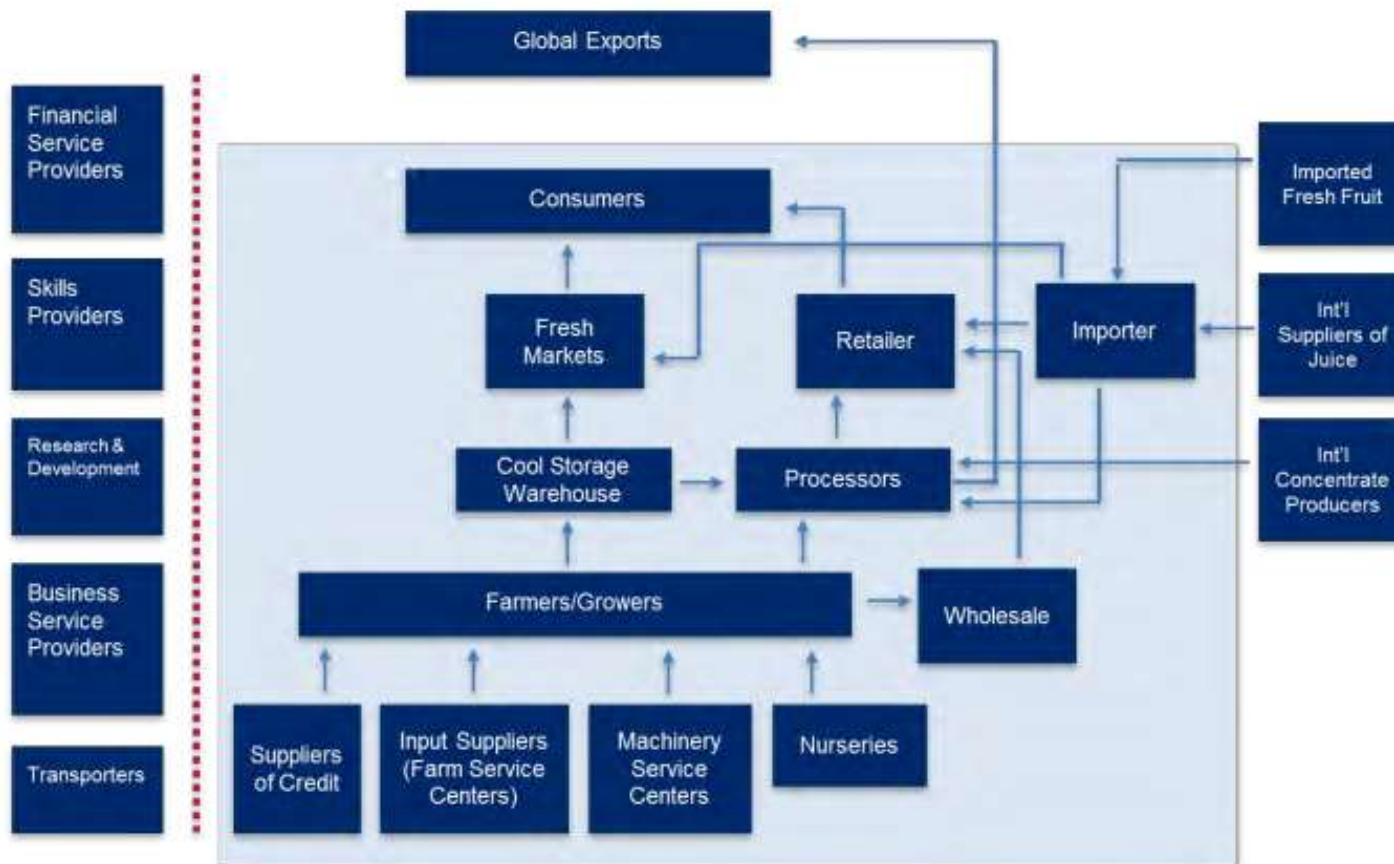
Farmers organizations, Private and non-government organization in sector

- Georgian farmers association
- Fruit production companies
- NGOs
- Private consulting organizations
- Donor projects
- Supermarket chains
- Transportation companies

Horticulture Value chain main actors

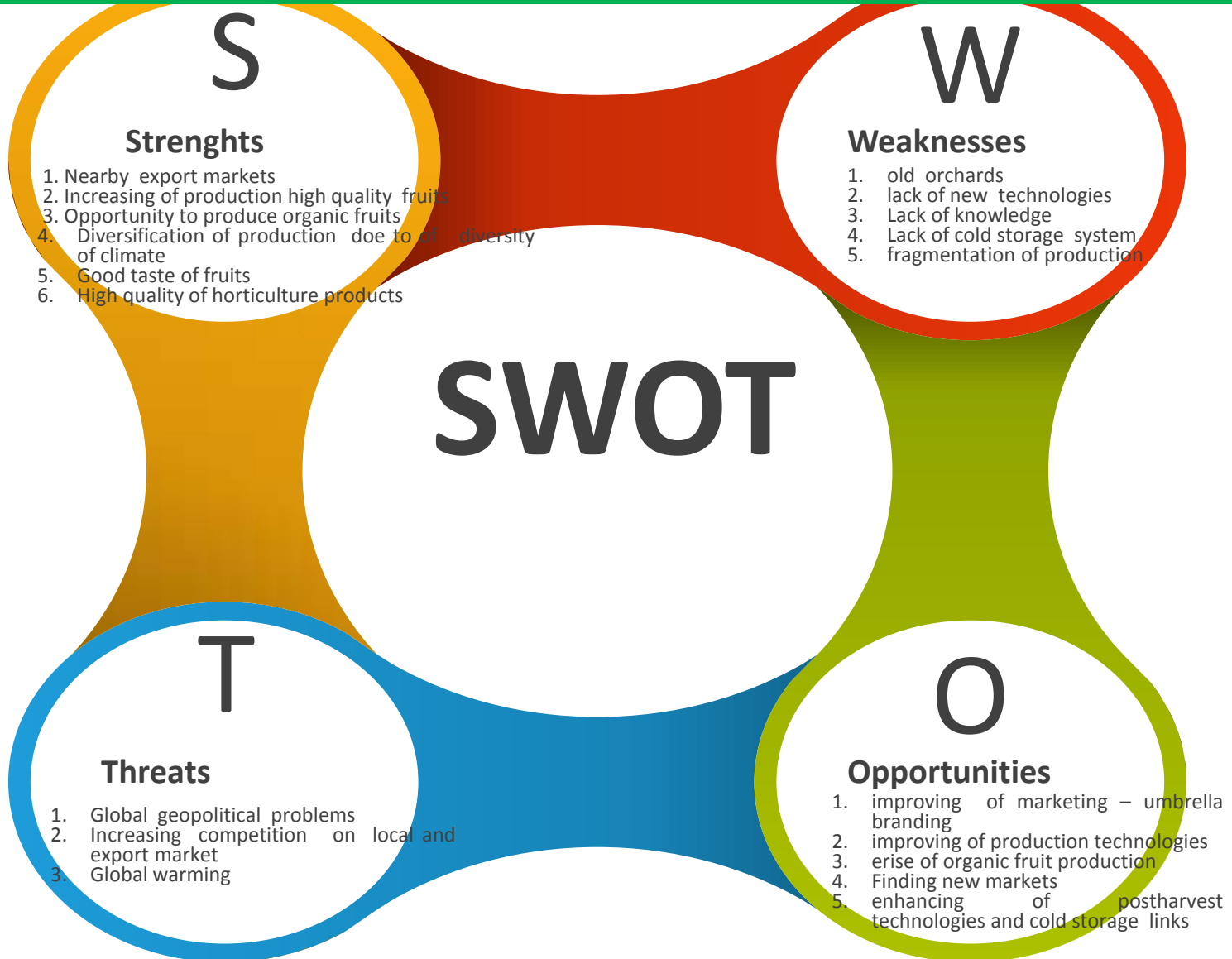
- Farmers
- Fruit tree nurseries
- Cold storages
- Input suppliers
- Shipment arrangers
- Intermediate wholesalers
- Retailers

Horticulture - Value chain schemes



Source: USAID EPI value chain assessments, 2011

Horticulture - SWOTs





Questions?



Thank you for attention !!!