

TAPE in 2020

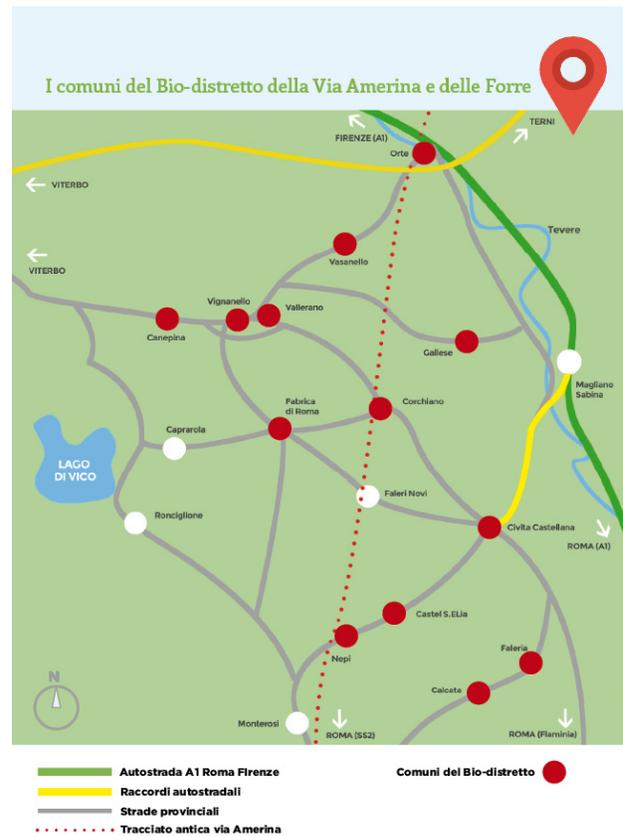
Schola Campesina

Results of TAPE in Italy

Biodistrict della Via Amerina e delle Forre (Viterbo province)

Step 0 : Collective description of the territory

- **Country, Province, District:** e.g. Italy, Viterbo, *Cambodia, Biodistrict della Via Amerina e delle Forre*
- **Location map**



- **Local name of the area:** *Biodistrict della Via Amerina e delle Forre*
- **General presentation**

The Biodistrict delle Via Amerina e delle Forre is an organisation that includes 13 municipalities (2 more asked to join) in the province of Viterbo, 50km north of Roma. Local producers have played a fundamental role in the creation of the biodistrict 10 years ago.

The biodistrict is a complex territory –with a lot of contradictions- which has been and still is an important economic pole. In fact it is the second most important producer of ceramics in Italy, and the first for hazelnut production (the core business of the biodistrict). The biodistrict therefore represents an important and wealthy industrial zone. There have also been a history of mine and quarries in the area (for resources such as tufo and breccia, among others), which have left scars on the landscape, forming large holes and chasms. Once these are abandoned, they risk becoming an exponential problem as there is a tendency to transform quarries into landfill/dumps for waste aggregates. This is something that the governance of the biodistrict has always fought against, to protect the biological character and image of the biodistrict.

The key activity is nowadays agriculture and is therefore the central point to be addressed in the society transformation toward sustainability. Hazelnut production and the consequent contamination is definitely a challenge in the biodistrict. That being said, the biodistrict is working through a holistic approach that incorporates the development of diverse services and industry. There are sustainable underpinnings to this endeavour, as they seek to incorporate circular economy principles, and also which to develop renewable energy in the region.

Constraints on these ambitions often lie with the political situation and will in Italy, and also the local motivation. There may also be logistical constraints on farmers that prevent them from modifying their activities. The discussion also included how the modes of thinking of certain farmers, which may be constrained by their contexts, needs, or background, may prevent agroecological transitions if they are unable to grasp the key principles.

- **Demographic information:** The Biodistrict delle Via Amerina e delle Forre has a population of approximately 70,000 inhabitants. The area contains more than 300 active farms. The total area of the biodistrict is approximately 421 square kilometres, with a population density of around 138.4 inhabitants per square kilometre.
- **Ecological environment:** The biodistrict is located in an area typified by three distinct geomorphological domains, principally: the volcanic districts of central and northern Lazio, the Tiberina valley, and the first reliefs of the pre-Apennines mountain range as it approaches the province of Umbria. The generalised geographical framework of central Italy, in which the study area is located, can therefore be said to contain a variety of geographical characteristics, including coastal plains and hilly interiors. The area of the biodistrict is within the influence of the hydrographic network of the Torrente del Trei and the Tiber valley, resulting in a variety of watercourses that penetrate and interact with the volcanic geology of the area. The climate is Mediterranean to subcontinental and continental in parts. Mean annual temperatures are typically around 14-17 °C and mean annual precipitation rates approximate 620-1000 mm¹. This currently facilitates incredible natural landscapes and beauty, which in turn has inspired a deep cultural history, signified by the urban planning of the villages, the archaeological remains in the area, the ancient churches, and astounding medieval castles and palaces.

However, the Mediterranean region has proven particularly vulnerable to the effects of climate change, as the region's temperatures have risen faster in the last decades with respect to the global average. Model predictions suggest that in the future the region will become hotter and dryer, with an increasing prevalence of drought and dry spells (Lionello

¹ http://www.soilmaps.it/download/csi-BrochureSR_a4.pdf

et al., 2014)². The deleterious effects of climate change have already been exhibited in a number of ways throughout Italy. For example, the adverse effects of climate change are exacerbating infrastructure deficiencies throughout Italy, and furthermore exacerbate industrial, agricultural, and municipal pollution issues that have arisen particularly in the wake of the industrial revolution, and may heighten the vulnerability of communities already susceptible to hydro-geological and seismic threats (WHO & UNFWC, 2018)³. Regarding future projected trends, the rising temperatures and weather extremes may induce water scarcity and, in fact in 2017, 11 regions, including Lazio, were poised to call on the national government to declare a state of emergency⁴. This water stress could potentially lead to a decline in agricultural production, an inhibition of economic development, and an increase in disasters such as forest fires and desertification. While climate change may impact things like air quality in urban environments, in rural environments it may lead to a reduction in biodiversity, by affecting ecosystem compositions and species richness and abundance.

- **Social and productive environment:** The primary goal of the biodistrict organization is to promote sustainable development at a territorial level where agriculture transformation plays a central role but incorporating all sectors including services and industry. The remit of the organization further includes the thematic areas of sustainable tourism, renewable energy, environmental stewardship, and a promotion of circular economy principles. With this foundation, the biodistrict aims to support a local community shift to a zero-emission model of production, by project development and realization within these areas. In order to expedite the realization of these goals, the biodistrict involves the collaboration of a number of local actors, including farmers, local markets, civil society, local public authorities, and relevant actors from the private sector.

The organic farms in the biodistrict (over 200) provide a large variety of organic produce, including vegetables, wine, oil, chocolate, eggs, hazelnuts, saffron, meat, and cheese. The agricultural and manufacturing sector of the territory in which the biodistrict operates are of crucial importance at the national level, representing the largest producing area of Italian hazelnuts, and the second for ceramics.

- **Market context:**

Many of the products from this area are sold in the main markets of Rome or in smaller local markets. Furthermore, direct selling schemes are utilized to distribute items to local families. Given the variety of markets available to local farmers, they are more adaptable to different situations and are more capable of absorbing shocks, such as the COVID-19 crisis. In the COVID crisis period so far, an increase in sales of up to 25% has been reported.

- **Enabling environment for agroecology:**

² Lionello, P., Abrantes, F., Gacic, M., Planton, S., Trigo, R. and Ulbrich, U., 2014. The climate of the Mediterranean region: research progress and climate change impacts. *Regional Environmental Change*, [online] 14(5), pp.1679-1684. Available at: <<https://link.springer.com/article/10.1007/s10113-014-0666-0>>.

³ WHO & UNFWC, 2018. *CLIMATE AND HEALTH COUNTRY PROFILE: ITALY*. WHO/FWC/PHE/EPE/15.52. [online] Geneva: WHO. Available at: <<https://apps.who.int/iris/bitstream/handle/10665/260380/WHO-FWC-PHE-EPE-15.52-eng.pdf?sequence=1>> [Accessed 12 July 2020].

⁴ BBC News. 2020. *Italian Regions Face Drought Emergency*. [online] Available at: <<https://www.bbc.com/news/world-europe-40803619>> [Accessed 12 July 2020].

As of last year (2019), the Lazio regional authority implemented the law for the Provisions for the regulation and promotion of bio-districts (n.11/2019) which outlines the conditions needed to create bio-districts, and the financial and technical support mechanisms that are required to ensure their viability and development.

The governance of the biodistrict is facilitated by an Assembly, which constitutes the central decision-making body. It is comprised of Mayors of the participating municipalities, representatives of associated partners, producers, private industry, and local citizens, as well as a Scientific Committee based at Tuscia University and other entities, and an Executive Committee that oversees initiatives in the territory. Furthermore, the regional development authority ARSIAL, which oversees development and innovation in the Lazio region, is also involved

The biodistrict maintains important links (outlined above) with universities and research centres.

- **Sample for data collection with TAPE:**

The focus of this study is to understand –and suggest improvements on- how TAPE can be used to help farmers that are concerned about their current situation and that wish to explore the possibility of self-improvement, for which TAPE may serve as a vehicle. As such, it is a qualitative rather than quantitative investigation. Therefore, 17 producers, representing 12 farms, have been interviewed. The farms can be categorized in 3 groups:

- diversified animal farms
- part-time hazelnuts organic farmers(Cimini hills)
- more diversified hazelnuts farms (Vignanello)

And a local convent.



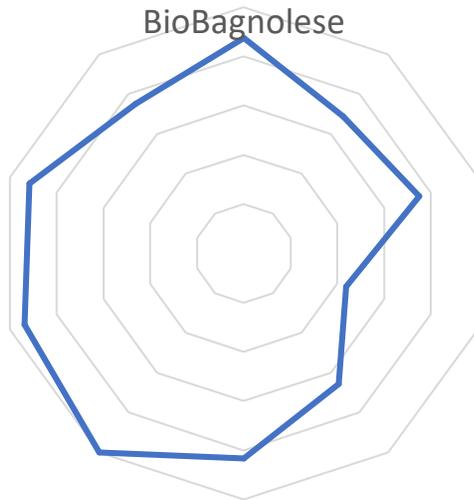


Pictures: Osman Alzany

Step 1: Characterization of Agroecological Transitions (CAET)

We are presenting here the results of the Step 1 (CAET) in the interviewed farms, for the 3 groups of farms and the convent.

Group 1 Diversified animal farms



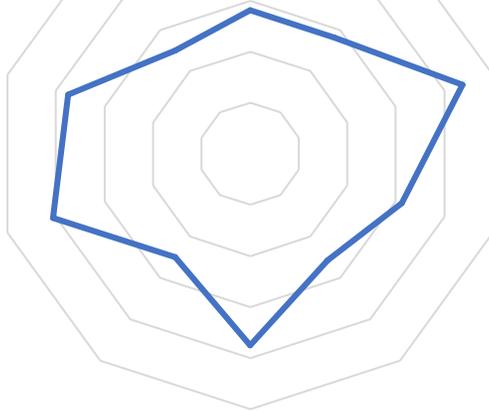
Note on the methodology

The interview at the BioBagnolese (our hosts) has been conducted by the enumerators, as part of the training on TAPE. The problem faced there was the feeling of the farmers to be judged by externals. The production system was indeed assessed by the enumerators and the farmers were giving information's to guide the assessment; they started to justify choices, explaining why the improvements were impossible, feeling assessed as good or bad farmers.

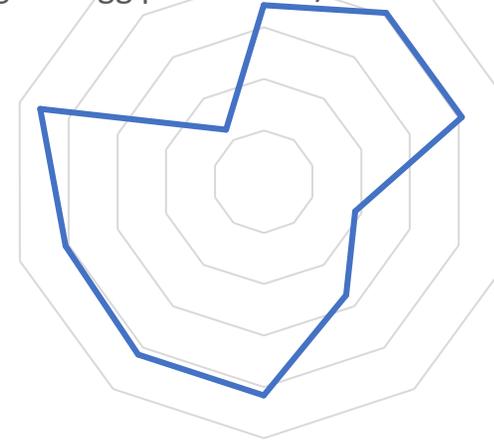
We therefore adapt the methodology to let the farmers directly self-assess (translating the Step 1 questionnaire in Italian).



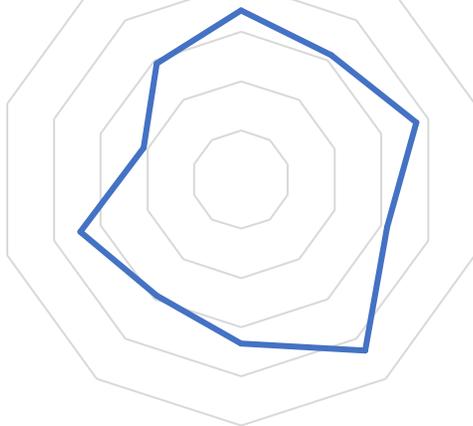
Cupidi Claudia
Organic egg production / Multifunctional



Cupidi Alessio
Organic egg production / Multifunctional



Cupidi Alessandro
Organic egg production / Multifunctional



Note on the methodology

Three members of the family Cupidi answered the questionnaires (Step1), conducting an independent assessment of their own farm.

Alessio is the father; Claudia is the daughter and Alessandro the son.

The graphs are quite different following each participant's point of view but also each one interpretation of the TAPE questions. This is why we decided to adapt (again) the methodology: the enumerator will explain de question and invite the participants to self-assess after a clear and common understanding of the question.

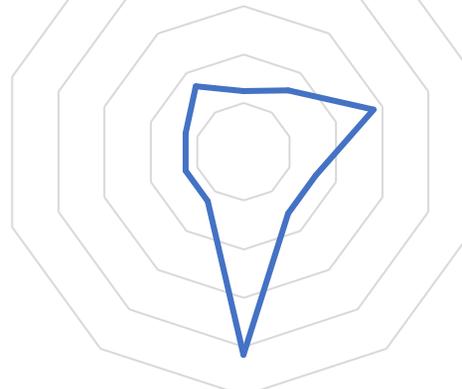
➤ **Conclusion for Group 1:** This group, where animals are included, is performing better than the other 2. Biodiversity, efficiency and human and social value are strong. The weak point is the governance, which is also the case in the other groups.

Group 2 Hazelnuts farms (Cimini hills) – organic farms cultivated by one single (and elder) farmer on a part time basis

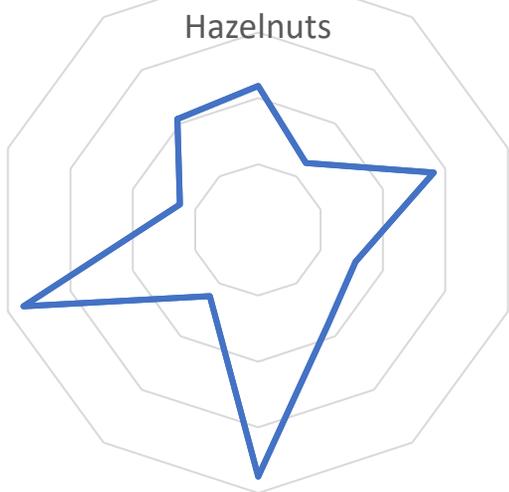
Bini farm
Chestnuts, walnuts, olive oil



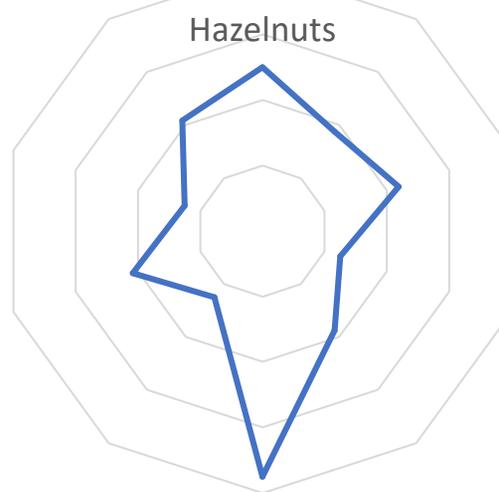
Piccioni (Renato) farm
Chestnuts, olive oil



Piccioni (Roberto) farm
Hazelnuts

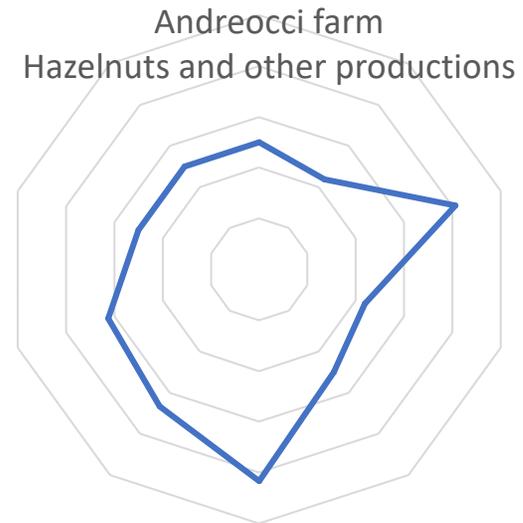
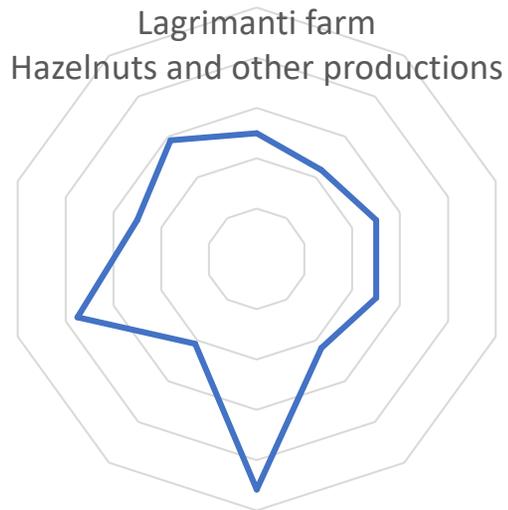
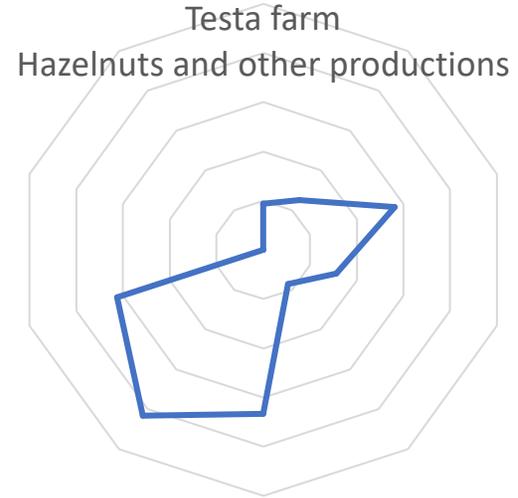


Donati farm
Hazelnuts



Conclusion for Group 2: Clear trends are shown by these graphs. The average score is low in these cultures based on nuts production. *Diversity and co-creation of knowledge* are very low compared to the other groups. On the other hand, *Culture and food tradition* is scoring very high, and *efficiency* is scoring higher than the other elements.

Group 3 **Diversified hazelnuts farms (Vignanello)**

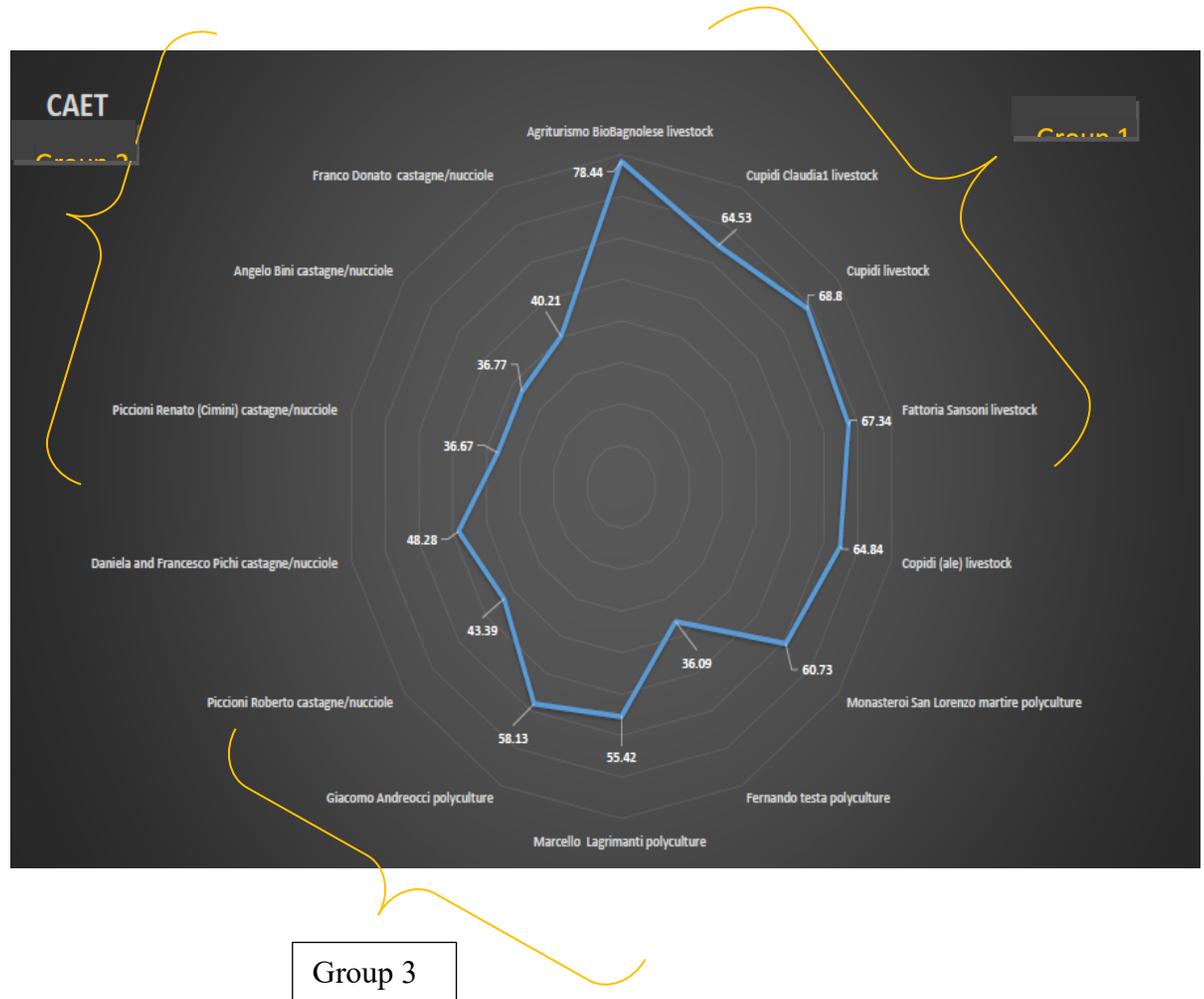


Conclusion for Group 3: There is no clear trend emerging out of this graph, except that the *efficiency* and *culture and food tradition* is scoring relatively high in this group. It generally scores slightly higher than Group 2, and lower than Group 1.

Conclusion

The farms that are more diversified and include animals (Group 1) are scoring higher in the Characterization of Agroecological Transitions (CAET); followed by polyculture productions (Group 3). Nuts monoculture production systems (Group 2) show the lowest cumulative scores.

Globally, the farmers interviewed are considering that their production system is part of a society where *culture and food tradition* as well as *human and social values* are relatively high. At the same time the *governance* and the *co-creation of knowledge* are low, which is an expression of the weakness of the organizations in the actual Italian society. The lack of organizations and associations, community of practices and unions (or community of interests) contribute to a poor access to markets and therefore low livelihoods. It is also a key element explaining the lack of knowledge transfer and sharing within the farmer community in this territory.



Step 2: Criteria of performance

The Step 2 of TAPE allows the assessment of the performance of the production systems, regarding 10 core criteria identified out of 5 dimensions of the Sustainable Development Goals. Observing the results of Step 1 and Step 2, we expect to find a positive correlation.

It is the case for the Biobagnolese farm (the only farm having tested the step2 in the biodistrict at the date of this report⁵): having an average CAET score of 80% (Step1), Biobagnolese farm is showing 7 criteria of performance positives and 3 acceptable (and 0 unacceptable).

In part 2, we make comments and observations, explaining also why we did not test this Step more broadly.

Step 3: Participatory analysis of the results

When the interviews had been concluded, a meeting was convened between the farmers who had taken part in the Step 1 test, other local residents, the president of the biodistrict, the FAO and Schola Campesina representatives, and other professionals / a member of the scientific board of the biodistrict, representing competencies in issues such as environmental pollution, governance, local production systems, and other thematic areas. This was an opportunity for this group to discuss the challenges of the territory toward more sustainability (coming back to the Step 0 discussion) and evaluate their thoughts on the results of the TAPE process.

Presentation of the results:

As seen previously, the results of the TAPE test in the biodistrict are highlighting that the more diversified farms that include animals (Group 1) were more “agroecological” as scoring better against the 10 elements on agroecology. Two key elements were indeed much more present in this group of farm than in the others: *circular economy* (direct selling, relationship of trust with consumers, easy access to fair markets) and *co-creation of knowledge* (capacity to transfer and share knowledge).

Circular economy and co-creation of knowledge are keys for sustainability at farm and community level. Therefore they represent an interesting way for improvement for the other groups.

The territory (and Italy in general) is characterized by the lack of organization / association. The non existence or malfunction in the existing farmers’ organizations / associations is a major cause of the poor access to fair market and therefore the low level of livelihoods. Indeed the element *governance* has been considered low by all interviewed farmers.

Discussion with the community:

Some of the points that were raised in this meeting, and in the days prior, included the following:

- Regarding governance and solidarity among farmers, and farmers organizations; some farmers expressed concern that ‘tragedy of the commons’ prevails, with every individual trying to maximize their own individual gain, even at the expense of others. This may be due to people being mainly focused on themselves and their own issues, or due to belief that they know better than others. Even within the discussion this manifested itself in the conviction of some participants that other farmers have a lack of knowledge leading to ignorant decisions that are uncultured. It was also raised as a possibility that, given that people are so busy trying to operate and survive on their own farming business, they cannot find the time to organize with others.

The production of hazelnut monocultures poses a concern for a number of residents, who worry about the water quality and soil and land quality of hazelnut producing lands subjected to the treatments of synthetic fertilizers and pesticides, and how this might affect the local

⁵ September 2020

environmental quality. A lack of knowledge regarding these issues by those engaging in activities that adversely affect the environment is also cited as a crucial problem.

On small farms they burn or dispose of waste, because they do not see the sense, or do not have the knowledge on how to reutilize it as an input into the system.

It was stated that farmers in the region perhaps do not have the ability to think in terms of interconnected systems, and only instead think linearly. Therefore, they think of issues or problems in terms of a univariate issues, instead of a holistic multivariate analysis.

This theme of knowledge transfer was raised in many forms. Other participants said that technical and scientific knowledge from universities and agricultural institutions is not necessarily transferred to farmers, who instead learn more from each other in social settings, including the local bar.

This ties into a final thematic area that was raised by a number of participants: a distrust of institutional authority. There is distrust that organizations such as the FAO, or politicians in general, have their own agenda that is not made in consultation with farmers, and that in the end is meant to only benefit the institutions rather than the farmers themselves. In this way they are 'left behind' and receive no ingrained protections. Even the biodistrict as an association was questioned as regards to its purpose. Whilst some farmers acknowledge that the biodistrict expresses admirable and noble aims, it has no clear plan or fixed roadmap for how to achieve this, rendering it largely unable to lead people.

Annex 2

TAPE in Georgia Jgali village (Samegrelo Region)

Step 0 : Collective description of the territory

- **Country, Province, District:** *Georgia, Samegrelo Region, Tsalenjikha Municipality, Village Jgali*
- **Location map (if available):**



Figure 1: Tsalemjikha Municipality. .

- **Local name of the area:** *Tsalemjikha Municipality, Village Jgali*
- **Official name of the Agro-Ecological Zones (AEZ) (if available):** N/A
- **Demographic information:** Village Jgali is located in the western part of Georgia, in Tsalenjikha municipality of Semegrelo-Zemo Svaneti region. According to 2014 census, it has 1022 inhabitants (52% female), mostly engaged in farming activities (absolute majority of the population are smallholders having as an average 1,5 agricultural land. Local population is mainly producing hazelnuts as cash crop and is partly engaged in substance farming or produces corn, sulguni cheese, different species, laurel, fruits such as kakis, kiwi, feijoa etc. for additional income).

Biological Farming Association ELKANA is a Georgian membership based non-governmental organization uniting organic and agroecological producers from all over Georgia (incl. individual farmers and well as farmers' organizations). Association ELKANA has been working with hazelnut producer farmers in three municipalities of the Samegrelo and Imereti regions since 2014. The work aims at the mobilization of hazelnut producers in community based cooperatives and improvement of their production and market power. With Elkana support, a local hazelnut growing cooperative Lakada has been established in Jgali village in 2016. Beginning of 2020 the founders of the Lakada cooperative, together with 7 other cooperatives and 1 informal group in the region, have established Association Caucasnut, which works with about 700 hazelnut farmers (among

them 94 hazelnut farmers from Jgali village owning approx. 148 agricultural land) and aims at:

- Supporting the improvement of the product quality and certification of member hazelnut grower farmers according to the EU organic and UTZ/Rainforest Alliance Standards;
- Facilitating of the member hazelnut grower farmers access to necessary information and trainings, as well as to the technical support required for improving their production systems;
- Facilitating the marketing of member hazelnut grower farmers organic and/or UTZ/Rainforest Alliance certified products with premium price, through cooperation with market partners oriented on collaboration for mutual benefits;
- Facilitating improved access to production means and necessary services through supporting development of hazelnut sector related services for farmers

In 2019, first certified hazelnuts were exported from Georgia. It has to be noted that the Caucasnut represents the first internal control group for certification in the Caucasus region. In the next 2-3 years Caucasnut aims to double its membership.

- **Ecological environment:**

Samegrelo region is characterised by excessive subtropical climate and has a strong influence of the Black Sea. Jgali is located on the junction of Kolkheti lowland (lowland of Colchis) and the mountain range of the Great Caucasus, on 230 metres above sea level and is characterized partly by subtropical and in the northern part by subalpine and alpine climates. The village is located on the right bank of the river Tchanistskali. The generalised geographical framework of the region, in which study area is located, can be therefore to be said to contain variety of geographical characteristics. Researched village is located in the humid subtropical climate of the sea, its plain and hilly strip are characterised by humid warm climate, snowless winters and hot summers. Its middle and highlands are moderately cold and chilly, with snowy winters and short summers, respectively.

The geographical location, located on the border of subtropical and temperate zones, is characterised by a rather high rate of solar radiation. The duration of the sunshine varies from 1800 to 2200 hours per year. Perennial temperatures close to 14 °C above the ground and 10 °–12 °C in the mountains.

The humid air masses coming from the sea cause high air humidity throughout the year. Annual precipitation rates approximate 3000 mm. This currently facilitates incredible natural landscapes and beauty, which in turn has inspired a deep cultural history, signified by the urban planning of the villages.

However, Samegrelo region, as other regions, is vulnerable to the effects of climate change. Spring rains, heavy winds, early frost and drought contribute in the development of the diseases in the agriculture sector. The adverse effects of climate change are exacerbating infrastructure deficiencies throughout the region, and furthermore exacerbate industrial, agricultural, and municipal pollution issues that have arisen particularly in the wake of the industrial revolution.

Regarding future projected trends, the rising temperatures and weather extremes may induce water scarcity. This water stress could potentially lead to a decline in agricultural production, an inhibition of economic development, and an increase in disasters such as forest fires and desertification. While climate change may influence things like air quality in urban environments, in rural environments it may lead to a reduction in biodiversity, by affecting ecosystem compositions and species richness and abundance.

In recent years the agriculture sector of the region suffered severely from various fungal diseases and the outbreaks of different invasive pests, especially Brown Marmorated Stink Bug (*Halyamorpha Halys* / *BMSB*), which caused dramatic reduction of the agricultural production including hazelnut production which had a decline by 53.7% in 2017 in comparison to 2016. In 2020 the sector is still recovering from the damage caused by the BMSB.

- **Social and productive environment:**

Organic farms in Village Jgali provides variety of organic products, including hazelnut, vegetables, fruits, poultry and dairy products. The regions itself is one of the largest hazelnut producing area and has vital importance at the national level.

The primary goal of Association ELKANA is to promote organic production and sustainable development, incorporating agroecological principles. For the achievement of the set goal, organization involves the collaboration of a number of stakeholders, including local markets, civil society, local public authorities, legislative branch and private sector.

- **Describe the kind and approximate number (if available) of agricultural endeavours:**

Farmers in the region are mostly small holders, on average they hold 1.5 ha of land. The main source of agricultural income is hazelnut production. The other agricultural products are also sometimes sold as well, but mostly they are produced for self-consumption.

- **Market context:** Interviewed farmers mainly sell hazelnut in shell, which is the main cash crop in the area. They also sell dairy products but it is rarer. The hazelnut is sold in the following ways:

- Smallholders gather in the agricultural cooperatives and sell to retailer or processor factories together. This gives them more bargaining power and easiness to access the market;
- Smallholders sell to retailers and factories separately themselves;
- Smallholders sell to intermediaries, who in their turn sell to factories and retailers.

- **Enabling environment for agro ecology:**

The Governmental decree on Organic Production was adopted in 2013 and Strategy of Agricultural Development of the Ministry of Environmental Protection and Agriculture of Georgia 2020-2027 mentions organic farming as a priority direction, however there are no support policies or programmes accessible for organic farmers in the country. In the contrary, the Government phytosanitary programmes in Western Georgia, especially Samgrelo region, are based on heavy chemicals (mainly pyrethroids or deltamethrin), which are not only spread by the National Food Agency in excessive amounts on the roads and fields, but also

distributed to farmers free of charge. State and private extension services are very weak and do not include agroecology or organic farming related advice or trainings. Another problem is related to the limited access to organic inputs, especially to organic pesticides in the country -their assortment is limited and prices are high. This pushes especially poor farmers to apply heavy chemicals against pests and diseases, as their prices are very agreeable, and the effects are immediate.

As mentioned above Association ELKANA supported organic hazelnut growers from Samegrelo and Imereti regions to set up Association CAUCASNUT, which provides extension and facilitates market access.

Some of the interviewed farmers have reported that there are some NGOs working on agro ecology, but none of them could name specific organisation except ELKANA.

- **Sample for data collection with TAPE:**

16 farmers have been interviewed for this qualitative research; they mainly follow traditional farming and organic farming methods. The gender split was even - 8 women and 8 men were interviewed.



Pictures: Elkana

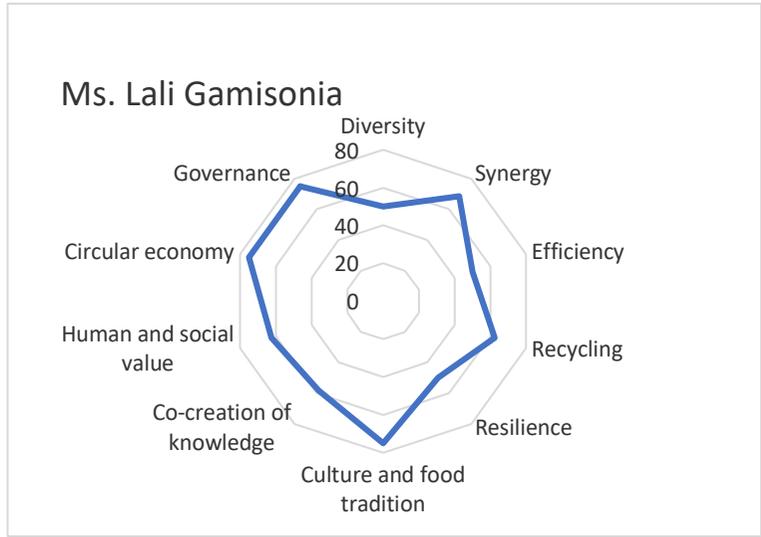
Step 1: Characterization of Agroecological Transitions (CAET)

We are presenting here the results of the Step 1 (CAET) of the interviewed farms, in Jgali village. As the interviews have been conducted within 2 different groups (Group 1: 8 women; Group 2: 8 men), we are presenting here the results by group.

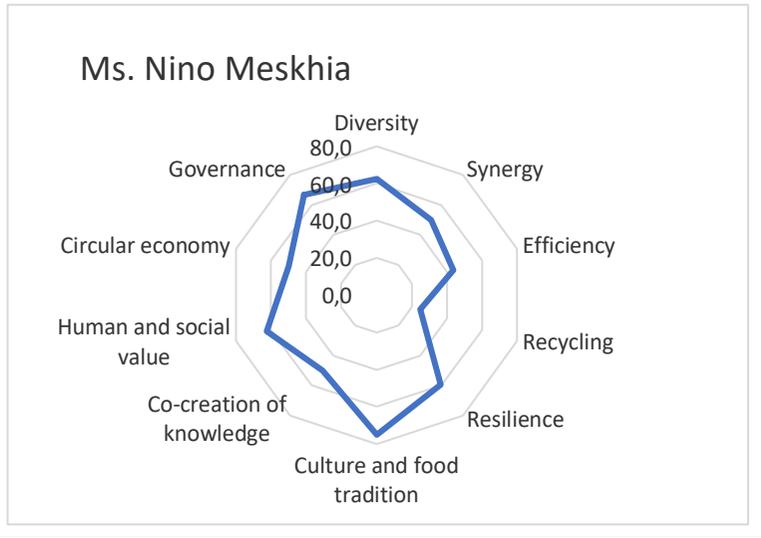
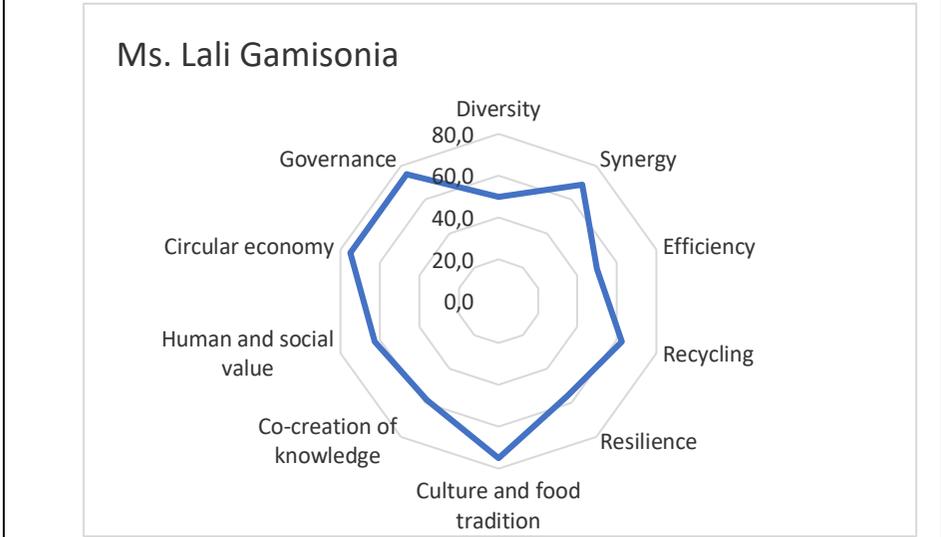
Important note: The enumerators realized, while conducting Step 2, that the participant farmers when self-assessing, underestimated their performance regarding the 10 elements of agroecology in Step 1 (CAET). Therefore, we present here the results of the original assessment of the farmer and the corrected version made by the enumerators. This bias can be explained by a lack of consideration for the local strengths (the diversity of their production system, their knowledge, etc.). It tells a lot on the pathways toward agroecology and worth to be further explored.

Group 1 (Women)

Original self-assessment



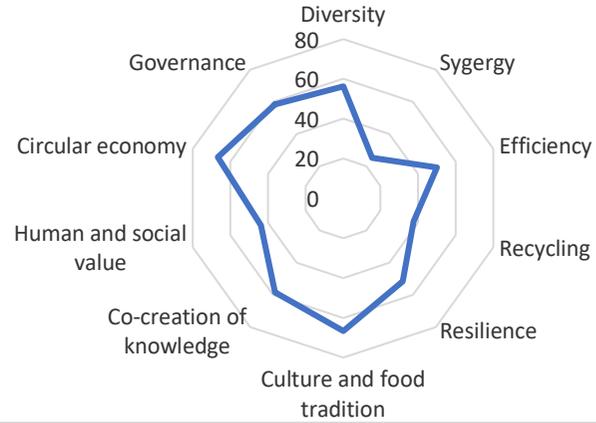
Corrected scores based on STEP2 information's



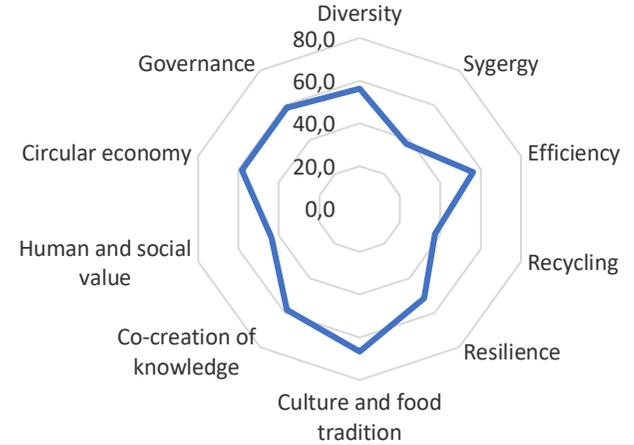
Original self-assessment

Corrected scores based on STEP2 informations

Ms. Maka Turdzeladze



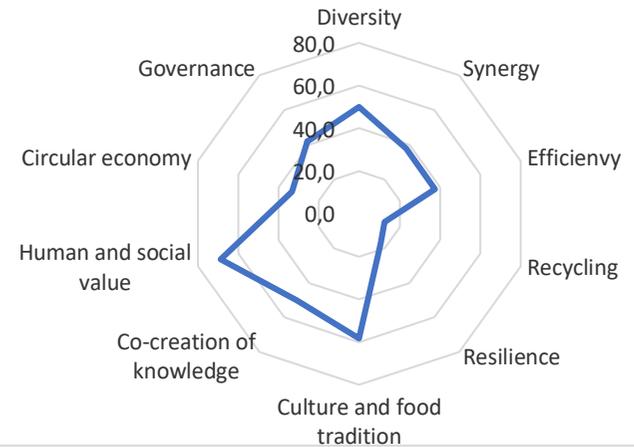
Ms. Maka Turdzeladze



Ms. Inga Mikava



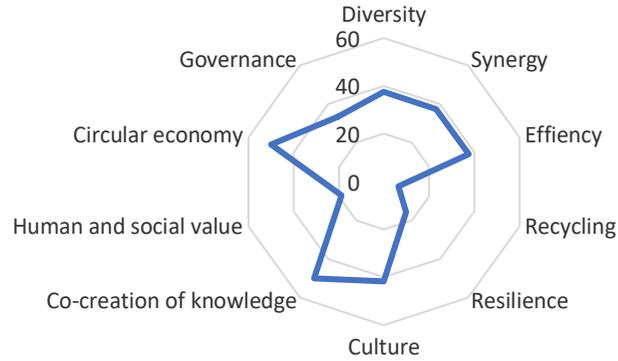
Ms. Inga Mikava



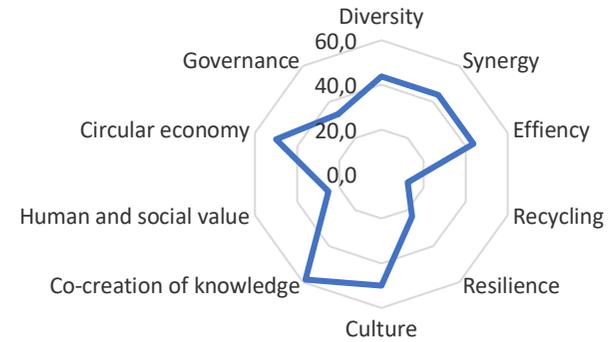
Original self-assessment

Corrected scores based on STEP2 information's

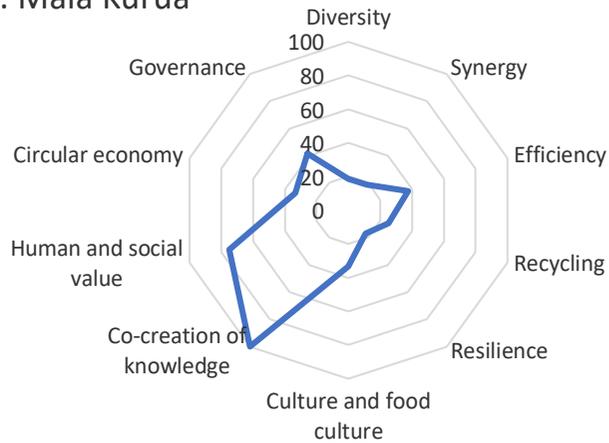
Ms. Khatia Kekua



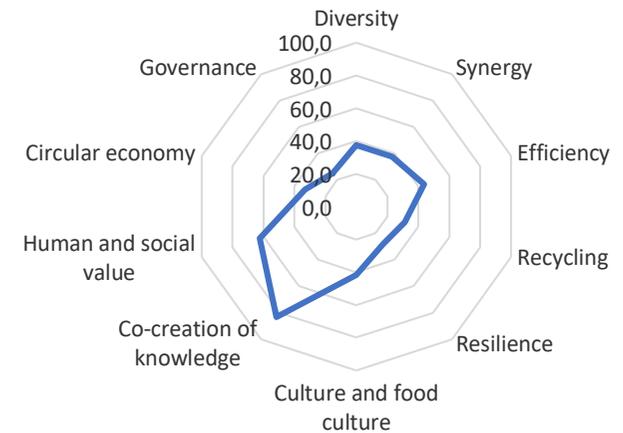
Ms. Khatia Kekua



Ms. Maia Kurua



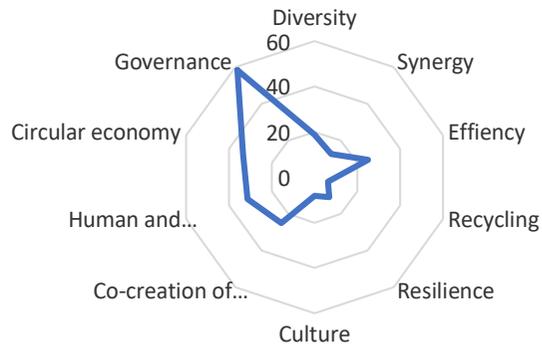
Ms. Maia Kurua



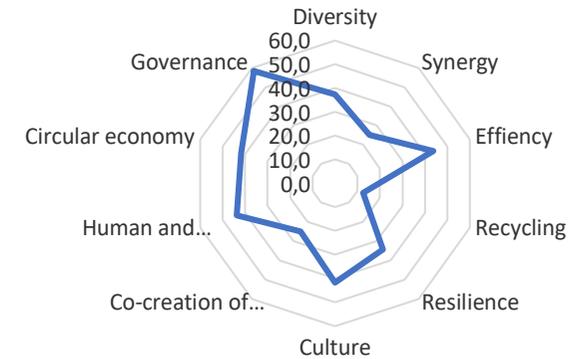
Original self-assessment

Corrected scores based on STEP2 information's

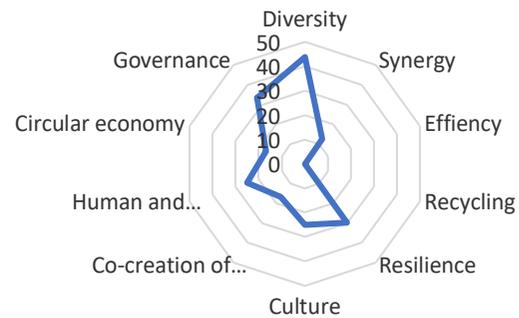
Ms. Nona Tolordava



Ms. Nona Tolordava



Ms. Nato Nchkebia



Ms. Nato Nchkebia

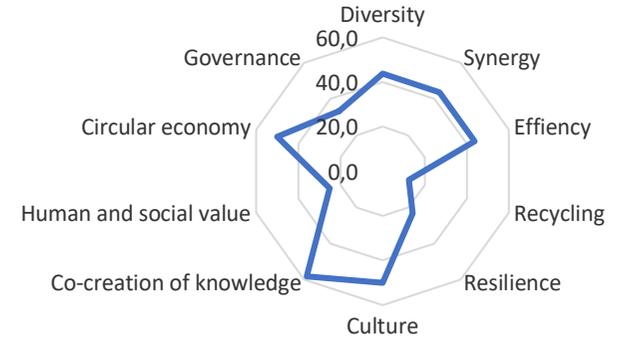
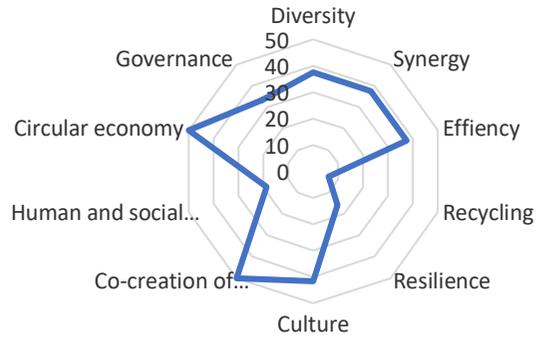


Original self-assessment

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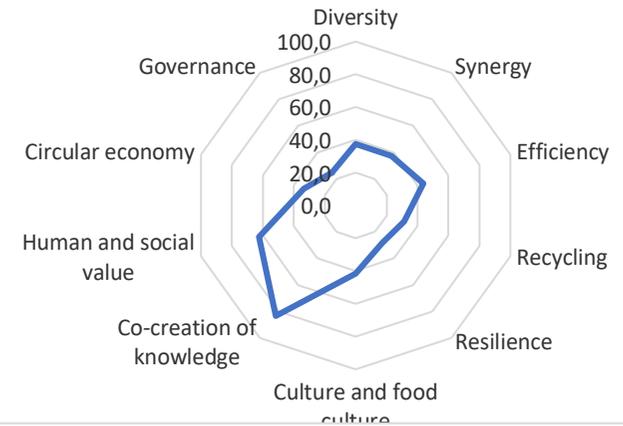
Ms. Khatia Kekua

Ms. Khatia Kekua



Ms. Maia Kurua

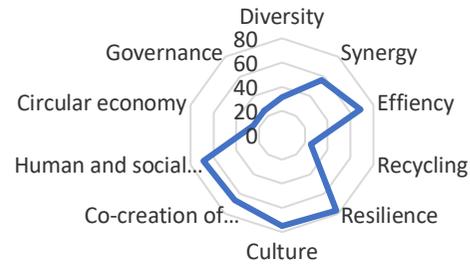
Ms. Maia Kurua



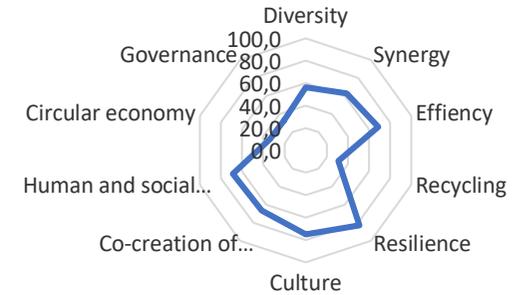
Original self-assessment

Corrected scores based on STEP2 informations

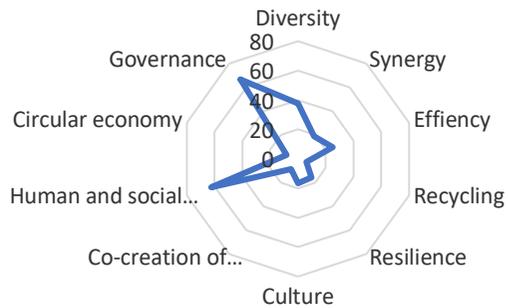
Mr. Fridon Kvaratskhelia



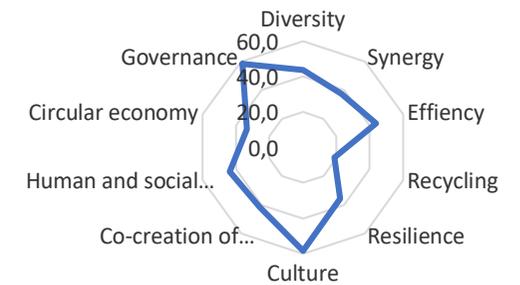
Mr. Fridon Kvaratskhelia



Mr. Paata Kvaratskhelia



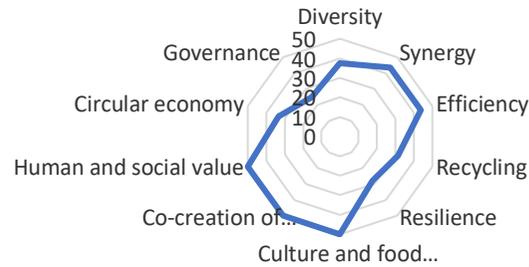
Mr. Paata Kvaratskhelia



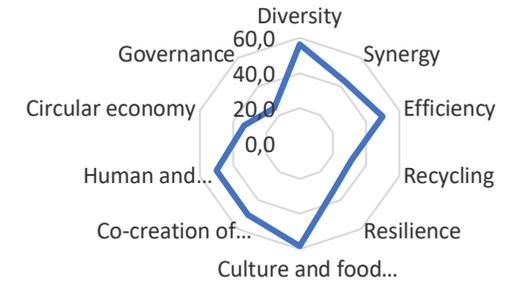
Original self-assessment

Corrected scores based on STEP2 informations

Mr. Gela Kvaratskhelia



Mr. Gela Kvaratskhelia



Mr. Ramaz Bobokhia



Mr. Ramaz Bobokhia

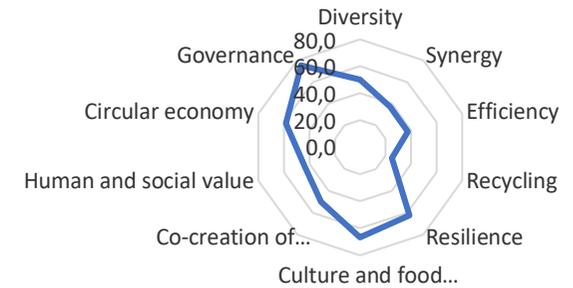
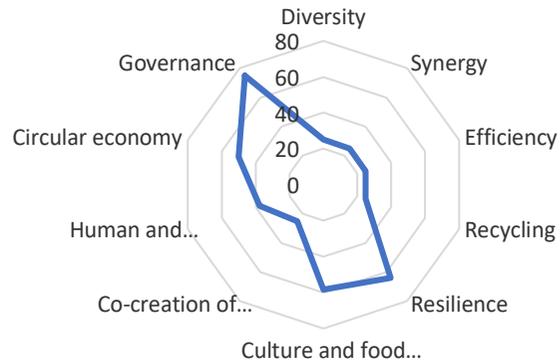


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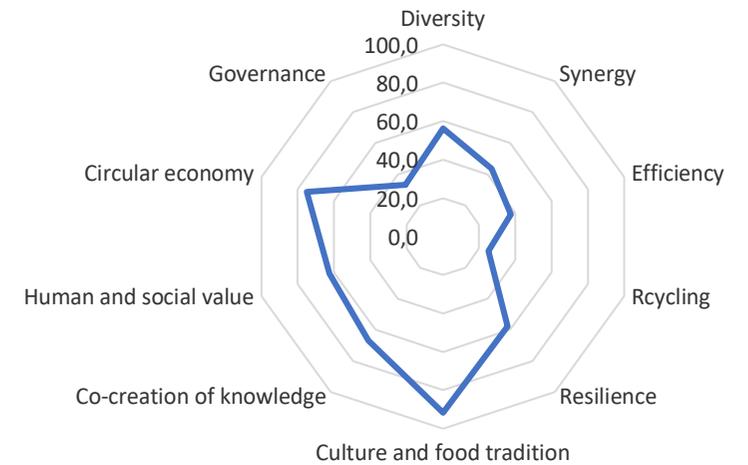
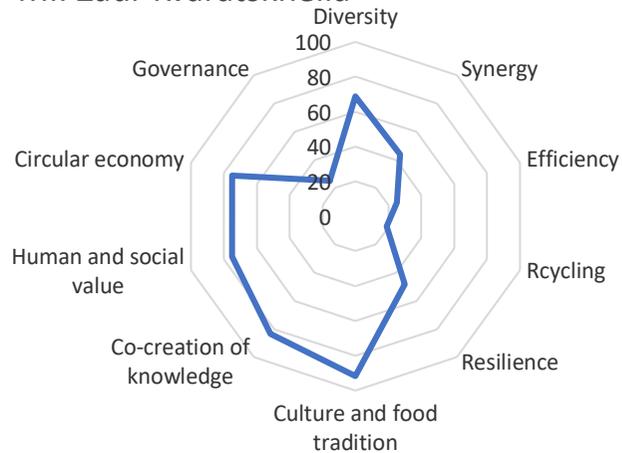
Mr. Levan Kvaratskhelia

Mr. Levan Kvaratskhelia



Mr. Zaur Kvaratskhelia

Mr. Zaur Kvaratskhelia



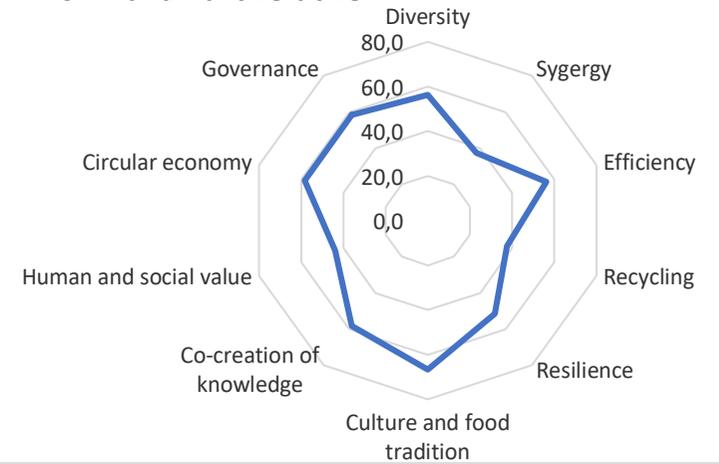
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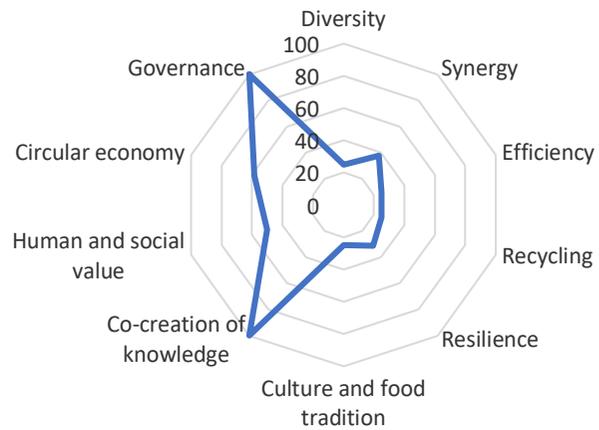
Ms. Maka Turdzeladze



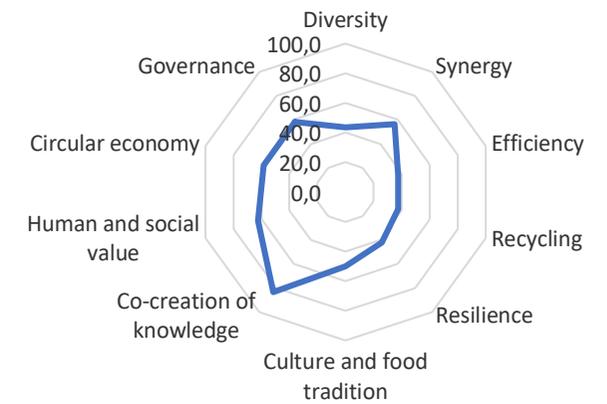
Ms. Maka Turdzeladze



Mr. Murman Kvaratskhelia



Mr. Murman Kvaratskhelia



This data analysis has been developed by FAO HQ (Dario Lucantoni)

The 16 farms have been regrouped into two main categories: those in an incipient process of transition to agroecology (7 farms) and those that are less advanced in the agroecological transition (9 farms), based on their CAET.

STEP 1 Results

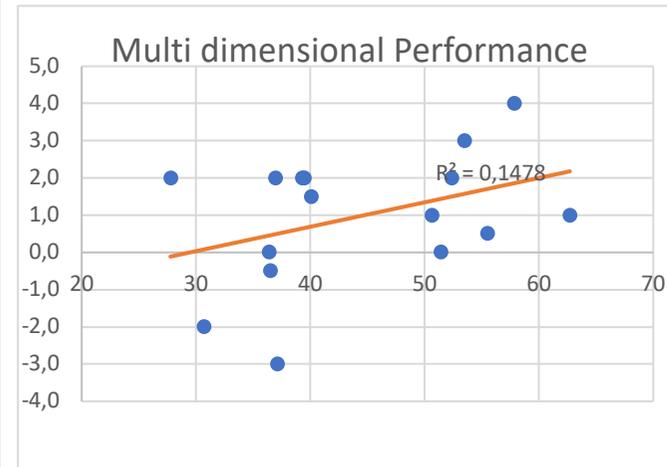
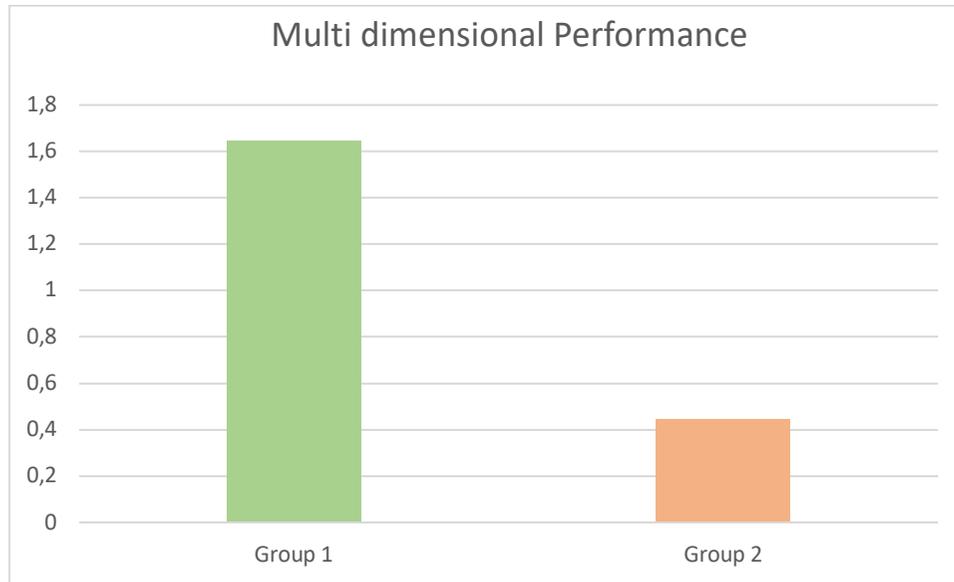
sys_name	Div	Syn	Eff	Rec	Res	CFT	CCSK	HSV	CSE	RG	CAET
Lali Gamisonia	50,0	68,8	50,0	62,5	50,0	75,0	58,3	62,5	75,0	75,0	62,7
Fridon Kvaratskhelia	56,3	62,5	68,8	31,3	82,8	75,0	66,7	68,8	33,3	33,3	57,9
Zaur Kvaratskhelia	68,8	43,8	25,0	18,8	48,4	91,7	83,3	75,0	75,0	25,0	55,5
Nino Meskhia	56,3	43,8	37,5	25,0	51,6	75,0	50,0	62,5	66,7	66,7	53,5
Murman Kvaratskhelia	43,8	56,3	37,5	37,5	35,9	50,0	83,3	62,5	58,3	58,3	52,3
Maka Turzeladze	56,3	25,0	50,0	37,5	51,6	66,7	58,3	43,8	66,7	58,3	51,4
Levan Kvaratskhelia	50,0	37,5	37,5	25,0	62,5	66,7	50,0	43,8	58,3	75,0	50,6
Maia Kurua	18,8	18,8	37,5	25,0	17,2	33,3	100,0	75,0	33,3	41,7	40,1
Paata Kvaratskhelia	37,5	31,3	37,5	18,8	34,4	58,3	41,7	43,8	33,3	58,3	39,5
Gela Kvaratskhelia	37,5	43,8	43,8	31,3	28,1	50,0	50,0	50,0	33,3	25,0	39,3
Khatia Kekua	43,8	43,8	43,8	6,3	23,4	50,0	58,3	18,8	50,0	33,3	37,1
Ramaz Bobokhia	43,8	31,3	37,5	25,0	42,2	66,7	33,3	31,3	33,3	25,0	36,9
Inga Mikava	43,8	18,8	37,5	12,5	17,2	41,7	50,0	68,8	33,3	41,7	36,5
Nona Tolordava	37,5	25,0	43,8	12,5	34,4	41,7	25,0	43,8	41,7	58,3	36,4
Nato Natchkebia	43,8	31,3	18,8	12,5	29,7	50,0	16,7	37,5	33,3	33,3	30,7
Zviad Kvaratskhelia	43,8	6,3	50,0	0,0	17,2	8,3	66,7	43,8	0,0	41,7	27,8

STEP 2 Results

The second step of TAPE has been conducted in all farms.

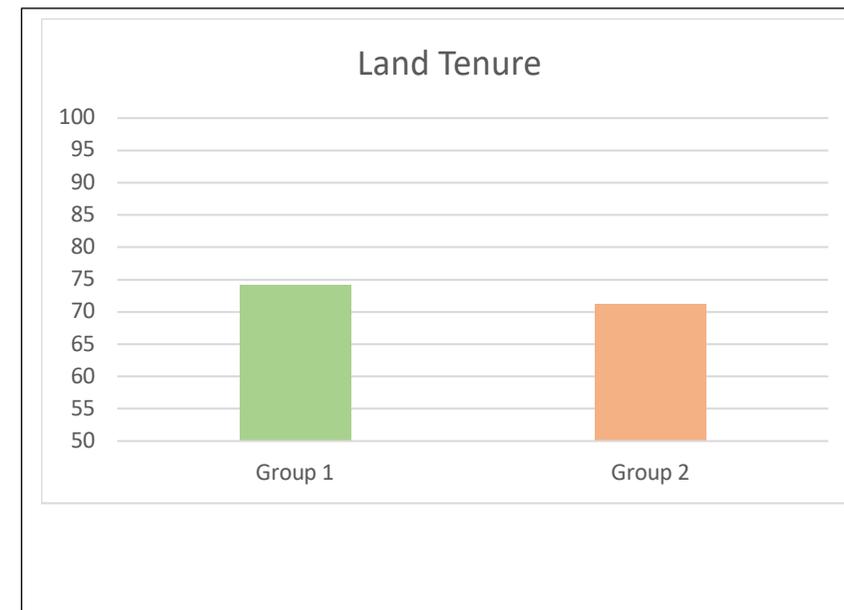
Multidimensional Performance on the 10 Core Criteria of Performance (Step 2)

Name	Agricultural area	Pasture area	Natural veg area	CAET%	Multidimensional performance
Lali Gamisonia	0,4	0	0	62,7	1,0
Fridon Kvaratskhelia	1	0	0	57,9	4,0
Zaur Kvaratskhelia	3	0,002	0	55,5	0,5
Nino Meskhia	0,3	0	0	53,5	3,0
Murman Kvaratskhelia	1	0	0	52,3	0,0
Maka Turdzeladze	2,5	0	0	51,4	-2,0
Levan Kvaratskhelia	1	0	0	50,6	0,0
Maia Kurua	2	0	0,5	40,1	1,5
Paata Kvaratskhelia	0,6	0	0	39,5	2,0
Gela Kvaratskhelia	1,5	0	0	39,3	2,0
Khatia Kekua	0,8	0	0	37,1	-3,0
Ramaz Bobokhia	0,8	0	0,1	36,9	2,0
Inga Mikava	1,3	0	0,4	36,5	0,5
Nona Tolordava	0,8	0	0	36,4	0,0
Nato Natchkebia	0,5	0,2	0	30,7	-4,0
Zviad Kvaratskhelia	2	0,3	0	27,8	2,0



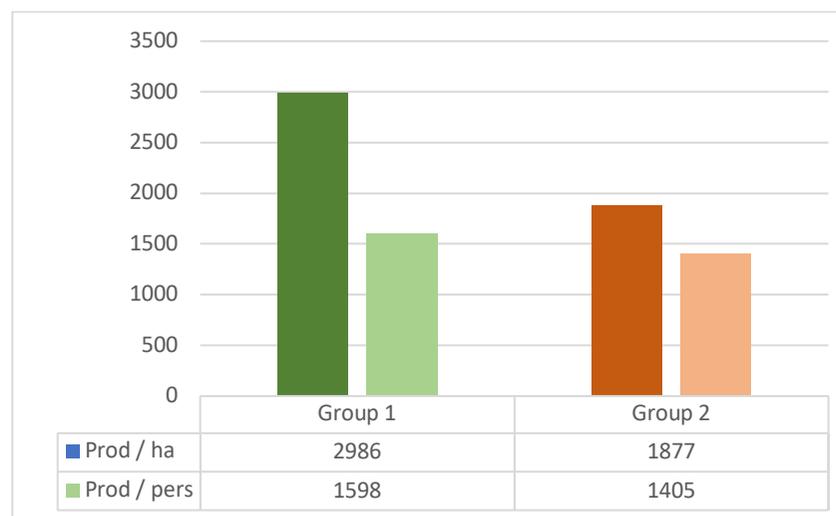
LAND TENURE

Name	Agricultural area	CAET%	Land Tenure	Land tenure men	Land tenure women
Lali Gamisonia	0,4	62,7	56,7	100	13
Fridon Kvaratskhelia	1	57,9	100,0	100	
Zaur Kvaratskhelia	3	55,5	100,0	100	
Nino Meskhia	0,3	53,5	50,0	0	100
Murman Kvaratskhelia	1	52,3	57,1	57	
Maka Turdzeladze	2,5	51,4	55,7	60	51
Levan Kvaratskhelia	1	50,6	100,0	100	
Maia Kurua	2	40,1	77,1	100	54
Paata Kvaratskhelia	0,6	39,5	100,0	100	
Gela Kvaratskhelia	1,5	39,3	100,0	100	
Khatia Kekua	0,8	37,1	55,7	57	54
Ramaz Bobokhia	0,8	36,9	58,6	59	
Inga Mikava	1,3	36,5	50,0	0	100
Nona Tolordava	0,8	36,4	50,0	0	100
Nato Natchkebia	0,5	30,7	50,0	100	0
Zviad Kvaratskhelia	2	27,8	100,0	100	



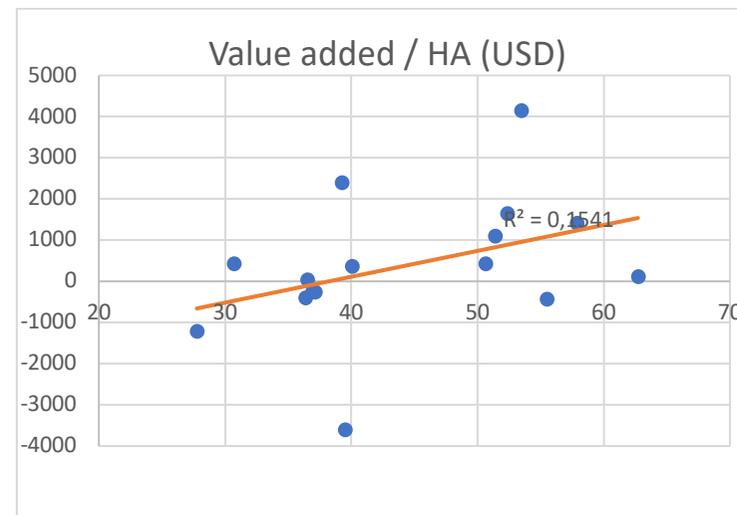
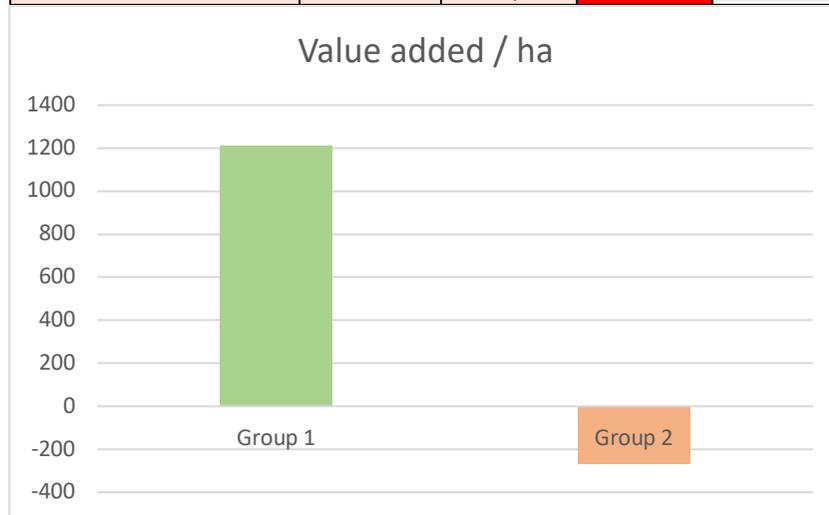
Productivity

Name	Agricultural area	CAET%	Prodcutivity / ha	Average Georgia	Prodcutivity / pers	Average Georgia
Lali Gamisonia	0,4	62,7	3262,5	458 USD	1305	1661 USD
Fridon Kvaratskhelia	1	57,9	1658,4		1658	
Zaur Kvaratskhelia	3	55,5	358,0		1074	
Nino Meskhia	0,3	53,5	11385,0		1708	
Murman Kvaratskhelia	1	52,3	2565,3		1714	
Maka Turdzeladze	2,5	51,4	642,5		3212	
Levan Kvaratskhelia	1	50,6	1026,9		513	
Maia Kurua	2	40,1	757,5		1010	
Paata Kvaratskhelia	0,6	39,5	4990,0		1497	
Gela Kvaratskhelia	1,5	39,3	1313,6		3941	
Khatia Kekua	0,8	37,1	1129,5		164	
Ramaz Bobokhia	0,8	36,9	3243,8		2518	
Inga Mikava	1,3	36,5	1272,7		652	
Nona Tolordava	0,8	36,4	735,0		283	
Nato Natchkebia	0,5	30,7	1730,4		428	
Zviad Kvaratskhelia	2	27,8	1717,5		2152	



Value added

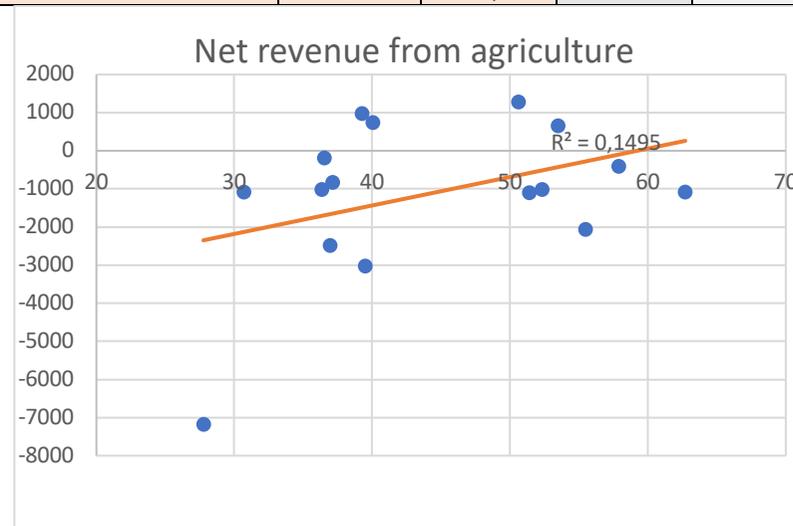
Name	Agricultural area	CAET%	Value added / ha	Average Georgia
Lali Gamisonia	0,4	62,7	128	462 USD
Fridon Kvaratskhelia	1	57,9	1424	
Zaur Kvaratskhelia	3	55,5	-427	
Nino Meskhia	0,3	53,5	4153	
Murman Kvaratskhelia	1	52,3	1651	
Maka Turdzeladze	2,5	51,4	1113	
Levan Kvaratskhelia	1	50,6	438	
Maia Kurua	2	40,1	372	
Paata Kvaratskhelia	0,6	39,5	-3595	
Gela Kvaratskhelia	1,5	39,3	2407	
Khatia Kekua	0,8	37,1	-248	
Ramaz Bobokhia	0,8	36,9	-243	
Inga Mikava	1,3	36,5	47	
Nona Tolordava	0,8	36,4	-396	
Nato Natchkebia	0,5	30,7	437	
Zviad Kvaratskhelia	2	27,8	-1204	



Income

Name	Agricultural area	CAET%	Net revenue	Average Georgia
Lali Gamisonia	0,4	62,7	-3600	?
Fridon Kvaratskhelia	1	57,9	-1345	
Zaur Kvaratskhelia	3	55,5	-6870	

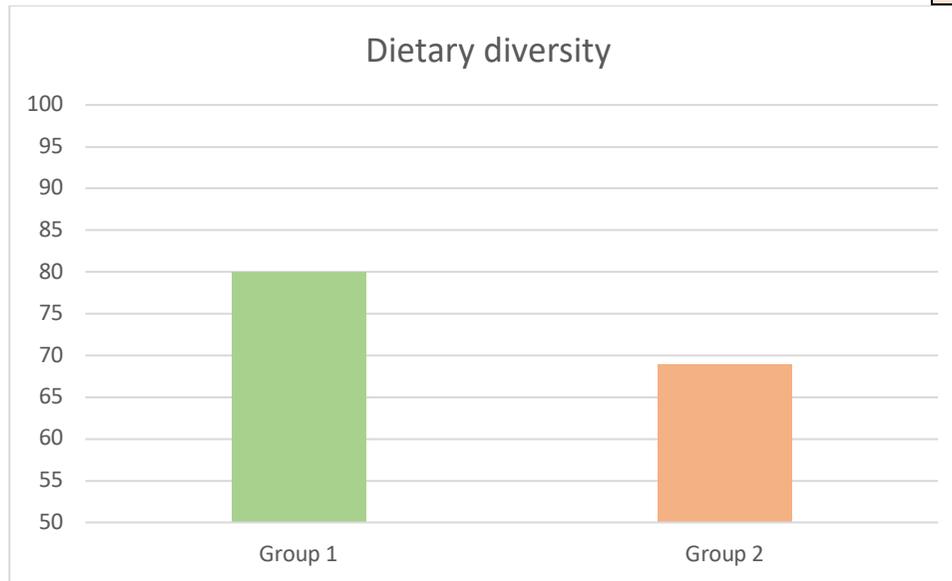
Nino Meskhia	0,3	53,5	2160
Murman Kvaratskhelia	1.002	52,3	-3418
Maka Turdzeladze	2,5	51,4	-3698
Levan Kvaratskhelia	1	50,6	4241
Maia Kurua	2	40,1	2455
Paata Kvaratskhelia	0,6	39,5	-10110
Gela Kvaratskhelia	1,5	39,3	3250
Khatia Kekua	0,8	37,1	-2790
Ramaz Bobokhia	0,8	36,9	-8280
Inga Mikava	1,3	36,5	-640
Nona Tolordava	0,8	36,4	-3400
Nato Natchkebia	0,5	30,7	-3600
Zviad Kvaratskhelia	2	27,8	-23934



Name	Agricultural area	CAET%	Expenditures food / pers	Dietary diversity
Lali Gamisonia	0,4	62,7	120	70
Fridon Kvaratskhelia	1	57,9	600	100
Zaur Kvaratskhelia	3	55,5	8	60
Nino Meskhia	0,3	53,5	200	100
Murman Kvaratskhelia	1.002	52,3	600	100
Maka Turdzeladze	2,5	51,4	150	30
Levan Kvaratskhelia	1	50,6	39	100

Dietary diversity

Maia Kurua	2	40,1	34	50
Paata Kvaratskhelia	0,6	39,5	300	100
Gela Kvaratskhelia	1,5	39,3	45	60
Khatia Kekua	0,8	37,1	131	50
Ramaz Bobokhia	0,8	36,9	270	100
Inga Mikava	1,3	36,5	300	70
Nona Tolordava	0,8	36,4	113	100
Nato Natchkebia	0,5	30,7	150	20
Zviad Kvaratskhelia	2	27,8	4500	70





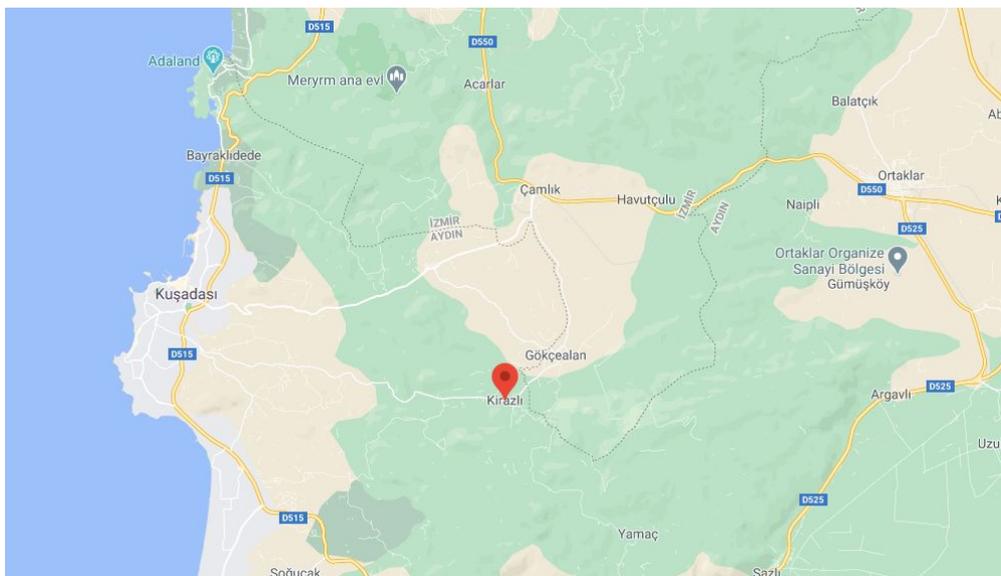
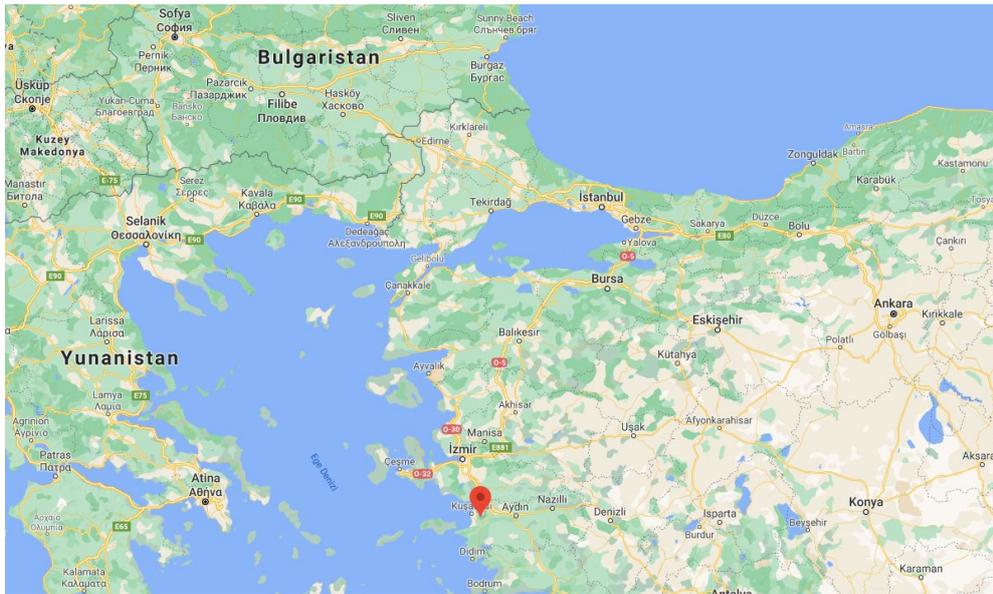
Annex 3

TAPE in Turkey

In Kirazlı

Step 0 : Collective description of the territory

- **Country, Province, District:** *Turkey, Aydın, Kuşadası, Kirazlı*
- **Location map:**



- **Local name of the area:** Kirazlı (literally, meaning the town with cherry, Kiraz=cherry)
- **Official name of the Agro-Ecological Zones (AEZ) (if available):** Not available

- **Demographic information:** In Kuşadası, 113.580 people are registered (in 2018). In Kirazlı village, approximately, 1500 to 2000 residents live. Almost all residents are Turkish.
- **Ecological environment:** The environment is mostly plain, covered with hills, and a forest. Area is rich in underground water. Mild Mediterranean climate conditions, summer is hot and dry, winter is mild and rainy. The sea is closeby.
- **Social and productive environment:** Mostly smallholder family farmers with a general amount of 3 ha of land per family; the land is mostly divided in 0.5-1 ha of pieces. The main agricultural products are cherry, grapes and olives. Almost all produce grape and exploitation mostly accrue in this product. Hence, some produce olives and cherry as well. Very small amounts produce other kinds of fruits and vegetables, mostly for domestic use. The grapes are sold to the national market (mostly, to middlemen who bring the product into markets in Istanbul). As well, they bring their product directly to the local market organized by the municipality of Kuşadası. Lastly, they sell their own product in the village farmers market. There are only 3-4 families doing husbandry, with a very little amount of animals. The village is connected to Kuşadası and Selçuk province with a road, which is fair for transportation of the products as well. There are established market spaces both in Selçuk and Kuşadası, as well as in the village. Since 2005, farmers are organized in the *Kirazlı Ecological Life Association*, which is one of the leading local-associations for transition to organic production, at that time. The Association was funded by UNDP SGP for creating bottling, packing, vacuum and labeling units. At the beginning, there 10 farmers in the system and the number reached to 50, containing around 1/4 farmers of the village. Today, the Association still exists, but most of the farmers left the system.
- **Market context:** There are 3 main ways farmers sell their product. First, selling to the middleman who brings the products into markets in Istanbul (which is the largest national market). Second, bringing their products directly to Kuşadası local market, and as well Selçuk and Kirazlı local markets. Third, selling on the farm. The third option is mostly opted by the agroecological farmers, who could provide a quality and diversity in their products.
- **Enabling environment for agroecology:**
 - There is the organic law in Turkey, which defines the standards for organic production and marketing of organic products. The organic certificate is provided by third party institutions, mostly referred as “organic certification companies”, authorized by the state. There is not any specific policy over Kuşadası or Kirazlı for transition to organic production. Indeed, the certification, bottling, packing and labeling legislations limit farmers from selling their products directly to consumers. The municipalities are, on the one hand, producing new discourses to support “good farming”, “natural farming” etc. which does not directly signify any production standards. Indeed, these municipality policies seem to be populist tools, rather than supplying direct support. In the case of Kuşadası, farmers told that Kuşadası Municipality (which Kirazlı is bounded) suppose to open a new farmers market, create a space for sample-agroecological farm in a public area,

and promote agriculture without pesticides; the presence of Kirazlı Ecological Life Associations, and farmers still practicing agroecology is crucial for affecting the policies of the municipality. Moreover, farmers are in need of selling their products directly, and accordingly, formed an agricultural cooperative very recently to organise this process. Thus, it can be foreseen that the Association and the Cooperative, with the help of the presence of agroecological farmers, will be the most supportive of this process.

- One of the farmers (the host farmer in the testing of TAPE) is a member of Çiftçi-Sen, which is the member organization of La Via Campesina. His presence, knowledge in food sovereignty and agroecology, and willingness to promote an educational space in the region is encouraging for the future of agroecological education. He also supports farmers for the transition if needed.

- **Sample for data collection with TAPE:** There were 8 farmers present in the TAPE testing. The host farmer is a member of Çiftçi-Sen. I have introduced the TAPE and the need for testing, and he organized the group himself, in connection with the village headman. The farmers joined TAPE testing are a group containing 1) young farmers 2) agroecological farmer 3) ex-organic farmer 4) a new farmer. The time we decided to gather, the government promoted new limitations regarding COVID-19. Thus, the number of farmers were limited.

Kirazlı is a fairly big village, located in Kuşadası, Aydın, with a population of 1500 to 2000 residents (changes from season to season). Aydın is one of the largest cities of the Aegean Region, mostly famous for agricultural production of grape, fig and cotton. Kuşadası is infamous for tourism and agricultural production. As the farmers reflect, Kirazlı is the most famous of the villages in Kuşadası, for its products.

In the gathering, there were 8 farmers present. 1 of them, which is the host farmer (Nihat Fırat) still perform agroecological production. The two of them used to produce organically, with a certain certificate, but apart from Nihat, others have quieted. The four have always done mainstream agriculture, using chemicals.

Firstly, I asked them to describe the social, economical and physical environment. Apart from one farmer, all were born in Kirazlı, and mostly spent their life living in the village. They find Kirazlı a social and productive community. Hence, they agreed that Kirazlı is in danger of new residents coming from bigger towns and cities with their new life style and pressure for newly modern housing; destructive energy projects such as geothermal power plants (an actual threat, one to be built in the neigbrough village, Gökçealan); and wind power plants (that are already built on the hill close by). In this sense, farmers think that the village will be corrupted in near future if no alternative appears.

The failure of the Association depends on access to market problems. To quote Nihat, “If we began organic nowadays, we would be very successful, as the organic market has been developed fairly enough in Turkey; hence, at the time we started, we were the pioneers. We succeeded in increasing our number to 50, but we failed in taking the right decisions on the market, we lost our products, and farmers started leaving organic.” As farmers all describe, being dependent on the industrial market, the middle man determines the price mostly and the main issue today is the cost of the products. For sure, as farmers reflected, this is dependent on the issue of how agroecology is developed in a farm, regarding inputs, seeds, labor force,

biodiversity etc. So, farmers are all aware of the advance of agroecology vis-a-vis industrial farming, but they do not believe that they will have enough access to market or get better income if they make the transition. They all reflect that, the only agroecological farmer -- Nihat Fırat-- have advantages comparing to their own farmers, when they heard of the questions of Step 1.

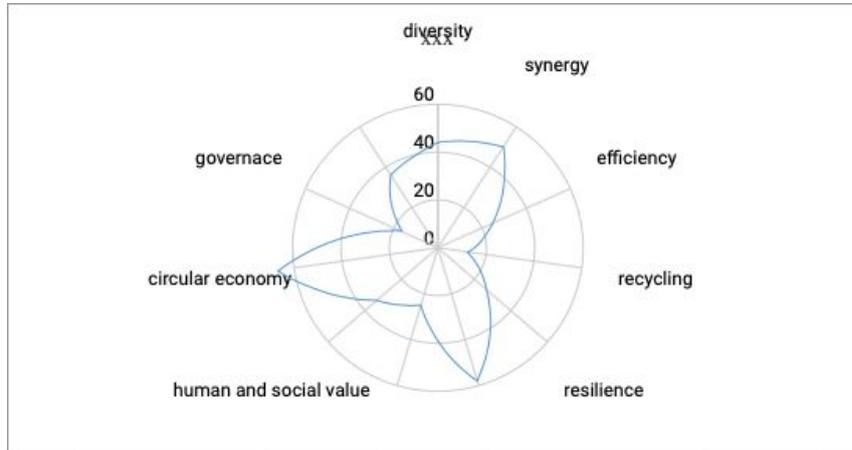




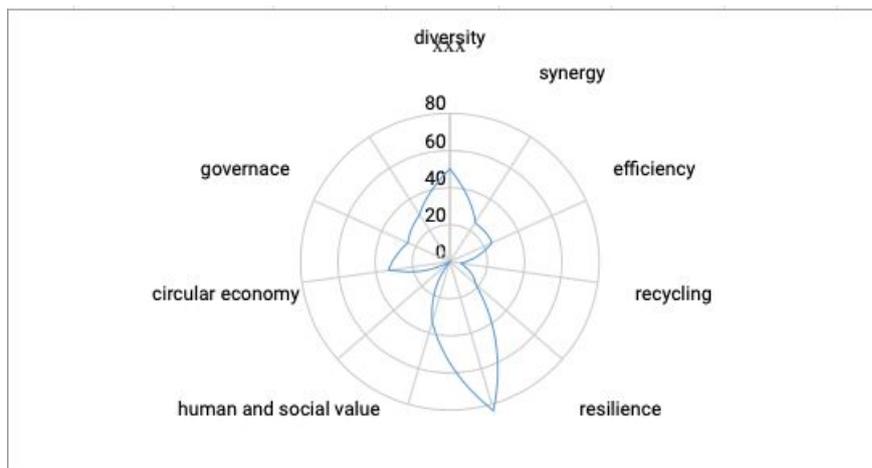
Pictures: Umut Kocagöz

Step 1 : CAET

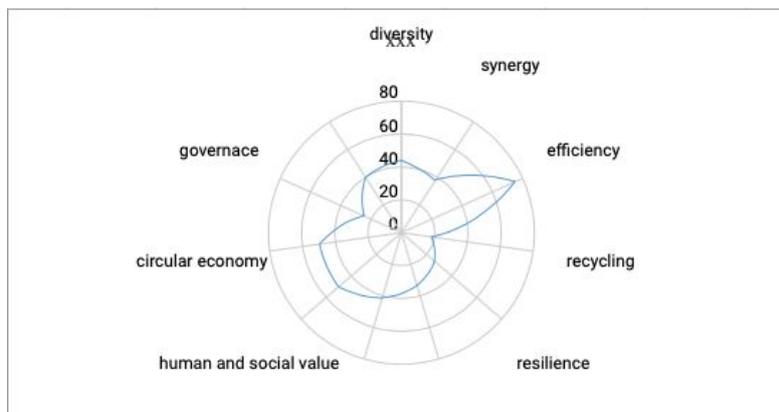
Erdal Pınar (producing mostly grape, olives, some vegetables)



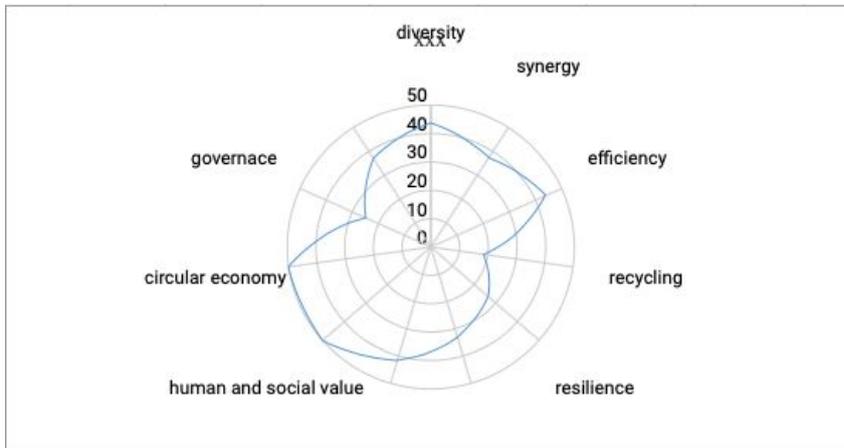
Ufuk Gülenç (producing mostly grape, olives, some vegetables)



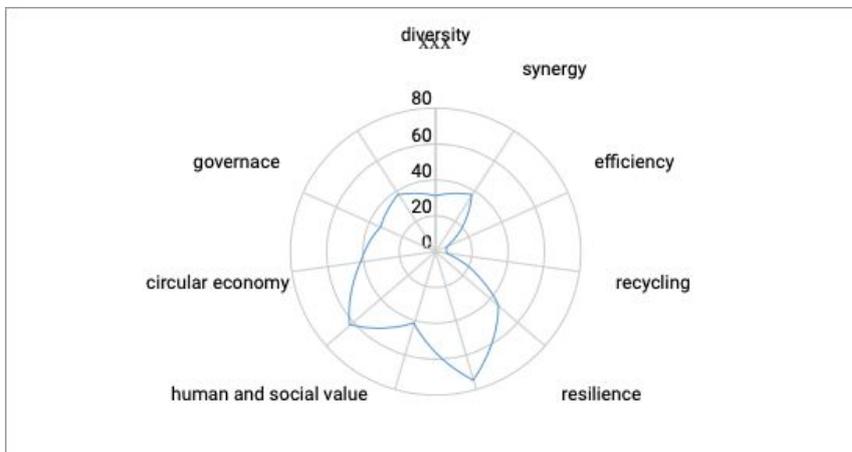
Selim Mersin (producing mostly grape, some vegetables)



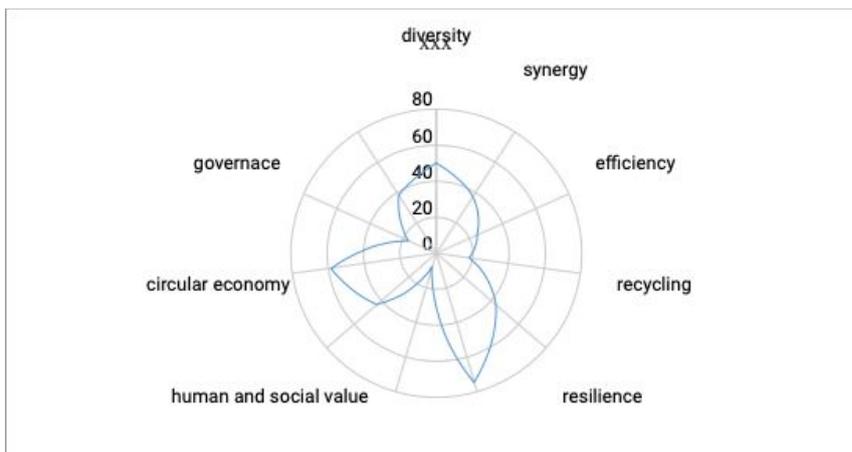
Hüseyin Fırat (producing mostly grape, cherry, some vegetables)



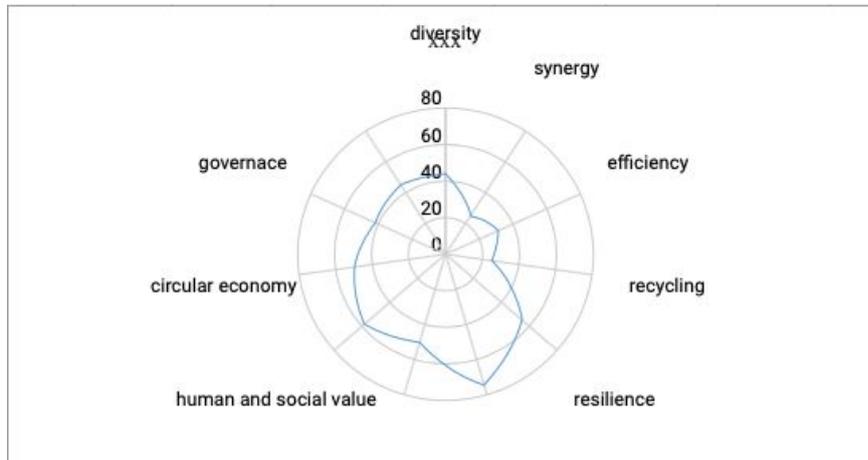
Galip Akduman (producing grape)



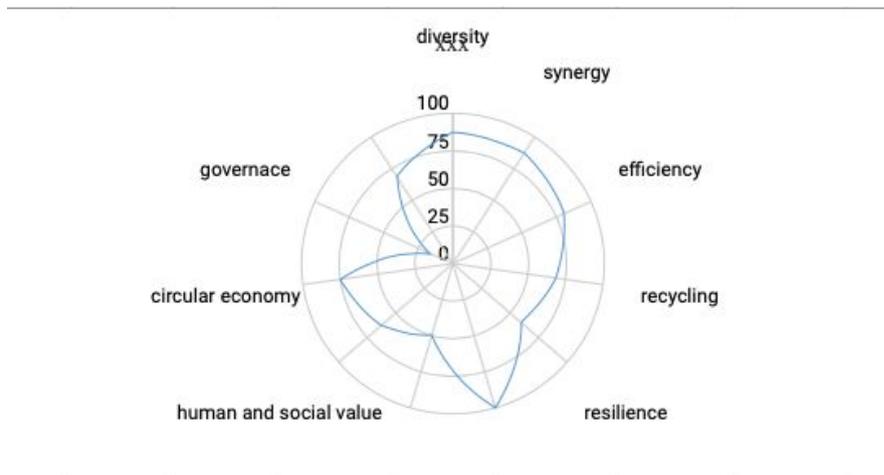
İbrahim Sayar (producing mostly grape, olives, some vegetables)



Hüseyin Uludağ (producing mostly grape, cherries, some vegetables)



Nihat Fırat / Kirazlı Köy Sofrası (Diversified production, including cherries, grapes, olives, and other vegetables, with a small amount of animals included.)



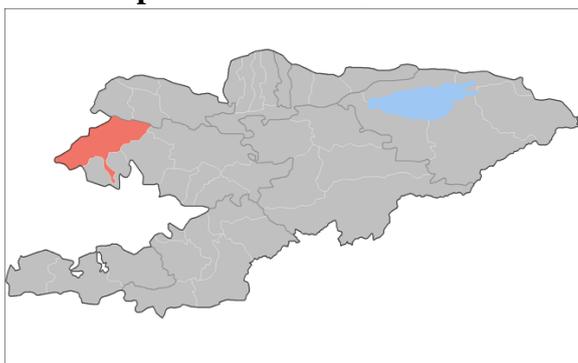
Annex 4

TAPE in Kyrgyzstan

Chatkal district

Step 0 : Collective description of the territory

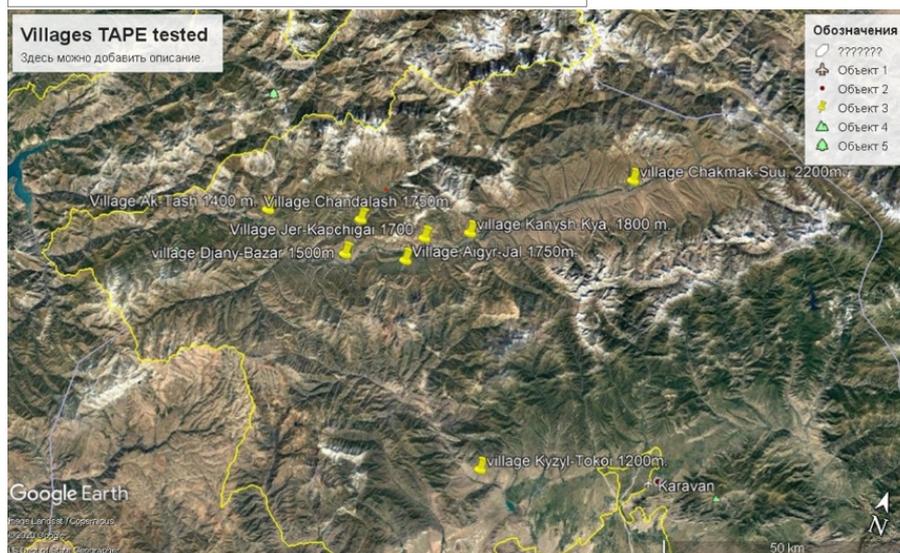
- Chatkal district/raion of Jalalabad province, Kyrgyz Republic:
Chatkal is a raion (district) of Jalal-Abad Region in western Kyrgyzstan. The capital lies at Kanysh-Kyya. Its area is 4,608 square kilometres (1,779 sq mi),
In total, Chatkal District includes 11 settlements in 4 rural communities (aiyl okmotu). Each rural community can consist one or several villages. The rural communities and settlements in the Chatkal District are:
 1. Kanysh-Kyya aiyl okmotu (center - village: Kanysh-Kyya; and villages Aygyr-Jar, Bashky-Terek, Korgon-Say, Kyzyl-Tokoy and Chakmak-Suu)
 2. Jangy-Bazar aiyl okmotu (center - village: Jangy-Bazar; and villages Ak-Tash and Kurulush)
 3. Sumsar aiyl okmotu (center - village: Sumsar)
 4. Terek-Say aiyl okmotu (center - village: Terek-Say and Kyzyl-Tokoi)
- **Local Map:** 41°45'51.13"N x 71°03'44.36"E



Source :

https://en.wikipedia.org/wiki/Chatkal_District

Accessed on December 10th (2020)



- **Local name:** “Chatkal”

- **Western Tian-Shan Environmental province.** “The transnational environmental area is located in the Tien-Shan mountain system, one of the largest mountain ranges in the world. Western Tien-Shan ranges in altitude from 700 to 4,503 m. It features diverse landscapes, which are home to exceptionally rich biodiversity. It is of global importance as a center of origin for a number of cultivated fruit crops and is home to a great diversity of forest types and unique plant community associations⁶⁷”. Aksuu-Zhabagly state reserve and Ygam national park of Kazakhstan, Ygam-Chatkal National park of Uzbekistan, Besharal Biosphere state reserve of Kyrgyzstan are located very closely within Western Tian-Shan environmental-climatic zone. Chatkal – this mountainous area with wildlife, numerous species of flora and fauna, is a UNESCO World Heritage Site. In addition to magnificent natural landscapes, many endemic and rare plants can be observed and explored here. Including tulips.
- **Demographic information;** Its resident population is about 22 500 inhabitants. Majority of population belongs to Kyrgyz ethnicity and some portion of other ethnic groups of Tajiks, Russians, Uzbeks. Because of shortage of workplaces many individuals, especially young people leave for cities, even abroad.
- **Ecological environment:** About 1300 types of plant grow in the area. Prevailing tree species is Juniper tree. Due to the sandy gravel type structure of the soil (on majority of region) is very poor and fragile. Only alpine meadows are suitable for long term grazing.
- **Social and productive environment:** The population is busy basically in agriculture and mining industry (livestock raising, land cultivation, gardening, artisanal mining, beekeeping, medical herb collection). Pastures belongs to the state, but given for use to local pasture committee members for long term period. According to the Pasture Law all community members can use pastures being members of pasture committee.
- **Kind and approximate number of local agricultural endeavors:** Majority of livestock owners (approximately more than 80 % of local population) keeps sheep, goat, cattle, horses, and yaks.

Livestock inventory of Chatkal district (statistic from Chatkal statistic department) January 1, 2020 (Population: 22 500 inhabitants)

1	Cattle (heads)	8153
2	Yaks	177
3	Sheep and Goats	72694
4	Horses	3649
5	Poultry/Chicken	36144/28217
6	Rabbits	21
7	Beer hives	568
8	Donkeys	225

According to National Statistic Committees data almost 97 % of all National Agricultural products produced by smallholder family farmers. This information was announced at the National Committee on Family Farm Decade meeting in Bishkek, 2020. The total number of smallholder family farms number is about 352 000. These average figures may be applicable to Chatkal district due to absence of big industrial

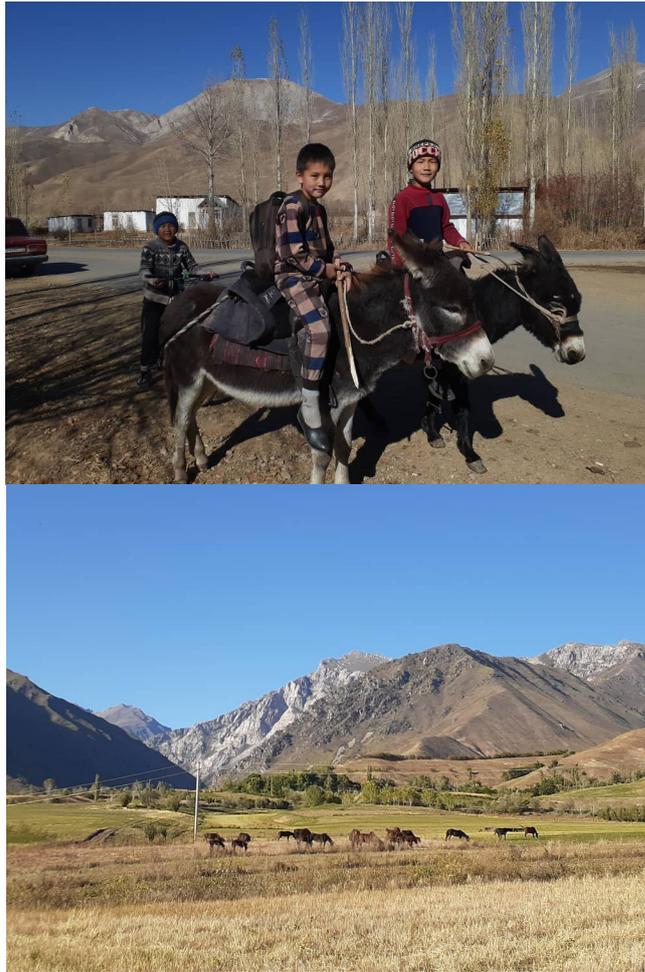
farms and big processing enterprises. National and local district statistic committee at the moment doesn't disaggregate agricultural production by category of smallholder and industrial producers separately.

Most of livestock owners use traditional well-developed services of community commercial herders for summer grazing. Also, nomadic way of grazing is used by some newly practicing young herders' families and extended nomadic families. In some areas winter grazing is also well spread. Depends on elevation above sea level local community cultivate: on upper land above 1700-2200 m. alfalfa, wheat, barley and potatoes are cultivated; in low land farmers afford cultivation of corn, legumes, gardening of apple, peaches, apricots, and beekeeping are widespread. In upper land areas local farmers average land allotment's size is about 2 hectares of arable land and 1 ha dry land or rain fed land. In lowland areas average family-owned land decreases to 0.1-0,5 ha per family.

- **Market context:** All local products are consumed by herder's families, livestock owners or marketed locally. Nearest markets are in district center Kanysh-Kya. Biggest market places (livestock markets) are at neighboring districts Alabuka and Talas. These markets are very close to neighboring countries like Uzbekistan and Kazakhstan. All needed inputs are purchased there also. All agricultural produced by livestock owners are processed at farm level. Newly constructed industrial milk processing unit is closed due to lack of milk in autumn and winter periods. Only in case of selling big number of livestock at the regional markets, the presence of middleman may occur. In marketing of other products, the role of intermediary is limited.
- **Enabling environments for agroecology:**
 - public policy;** State and local public policy is relatively favorable for livestock keepers, nomadic herders. Good example of state policy is adoption of the National Pasture Law by Kyrgyz Government and Parliament. But such a positive change happens and driven not by governmental stuff or by local herder's initiative It's driven by International Donor organizations. From other hand the local communities and herders are really worried with foreign mining activities, access to land and pasture, limitation of animal traffic routes, environmental hazard of chemicals, water and environment pollution deforestation, pasture degradation due to mining activities.
 - local actors** like local governments, local Council members, women group leaders and local herders they needed to be taught on Agroecology in order to create favorable condition for conserve and further develop agroecology in pastoral communities.
 - potential groups or networks** are pasture users' groups and grassroots farmers/herders' groups. Our Nomadic Livestock Keepers' Development Fund together with other extension services, women groups through our networks can support the agroecological transition of local livestock owners. This summer together with local herders we developed joint activities to organize summer kinder camp/garden where Agroecology will be taught to herders, women, and for young children. For extension and widespread of Agroecology we need to build partnership with National Agrarian Academy Agronomy Faculty teachers and students/volunteers to involve them in our activities and later to include Agroecology into their Curriculum.



Pictures: Akylbek Rakaev



Important note

Agroecology is a new term, a new movement and a new challenge for local nomadic communities and herders in Kyrgyzstan. Only a few national NGO leaders and experts are familiar with Agroecology. The work done around TAPE is therefore very important for the herders and their organizations, the local authorities and policy makers.

Sampling

The enumerator, Akylbek Rakaev, identified the pastoralist families to be interviewed based on the altitude of their village. The altitude is conditioning key aspects of their life and activity including access to pasture lands, access to markets, access to inputs (fodder), etc. Step 1 results will be analyzed shortly based on this element.

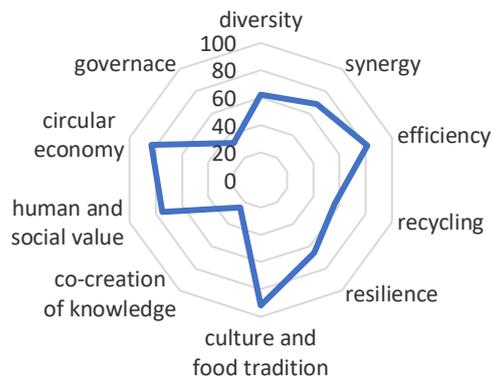
Here below, a table with the interviewed families and the altitude where they live. Four groups of families have been identified, according to 4 levels of altitude of the village.

##	Name, Family Name of herder/farmer	profession	Village name	Village, winter camp location, elevation, (m/above sea level)	Distance of herd migration, from winter camp (km)	Grazing, (m above sea level)
1	Atahan Tashbaev	Farmer/livestock owner	Chakmak-Suu	2200	15-25	2200-3200
2	Kapar Atamkulov	Livestock owner/herder	Chakmak-Suu	2200	15-25	2200-3200
3	Kubanychbek Manapov	herder	Djar-Kapchygai	1700	10-15	1700-3000
4	Sovetbek Kadyrbekov	herder	Kanysh-Kya	1700	10-15	1700-3000
5	Jamalbek Rajymbekov	herder	Chandalash	1700	20-30	1700-3000
6	Altynbek Baiyzbekov	Farmer/livestock owner	Chandalash	1700	20-30	1700-3000
7	Kadyrbek Djakypbekov	Horse herder	Aigyr-Djal	1700	30-40	1700-3000
8	Tyrgynbai Kozubaev	Farmer/livestock owner	Ak-Tash	1400	10-15	1400-3000
9	Almaz Turgunbaiev	Farmer/livestock owner	Ak-Tash	1400	10-15	1400-3000
10	Usonbek Myrzagulov	farmer	Djany-Bazar	1500	10-15	1500-3000
11	Adilbek Aitbekov	herder	Ak-Tash	1400	10-15	1400-3000
12	Begaly Toichubekov	herder	Kyzyl-Tokoi	1200	125	1200-3000
13	Ulanbek Kainazarov	herder	Kyzyl-Tokoi	1200	125	1200-3000
14	Taalai Ismanov	herder	Kyzyl-Tokoi	1200	125	1200-3000
15	Bakytbek Oskonov	herder	Kyzyl-Tokoi	1200	15-30	1200-2500
16	Doolotbek Orozbaev	herder	Kyzyl-Tokoi	1200	125	1200-3000

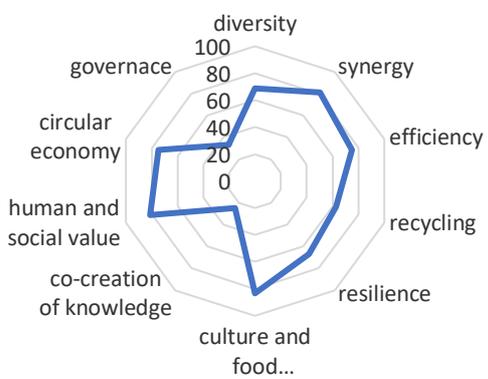
Step 1

Group 1 (Families : 1,2. Altitude of the village 2.200m)

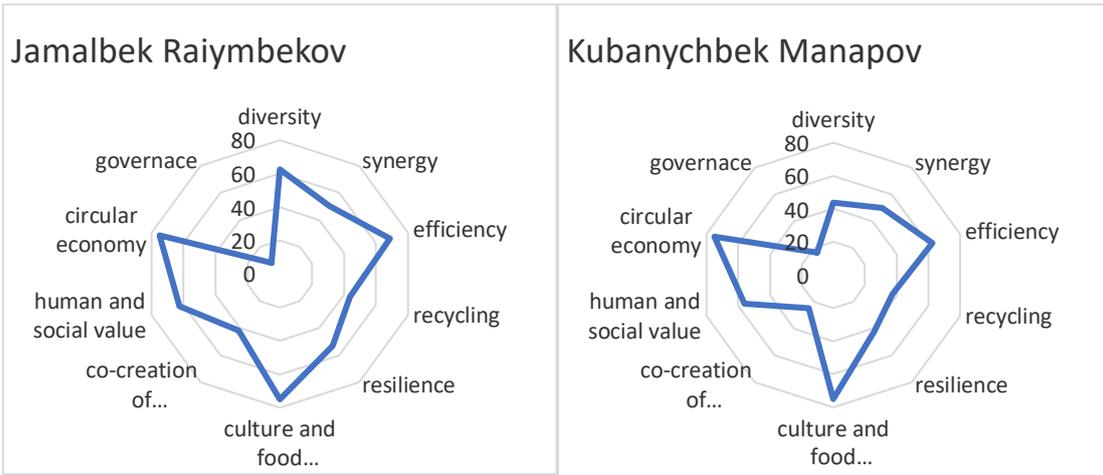
Atahan Tashbaev



Kapar Atamkulov



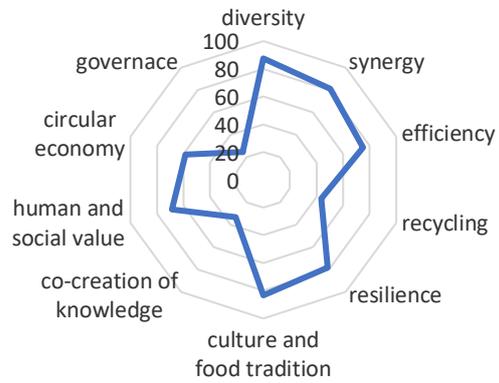
Group 2 (Families: 3-7. Altitude of the village 1.700m)



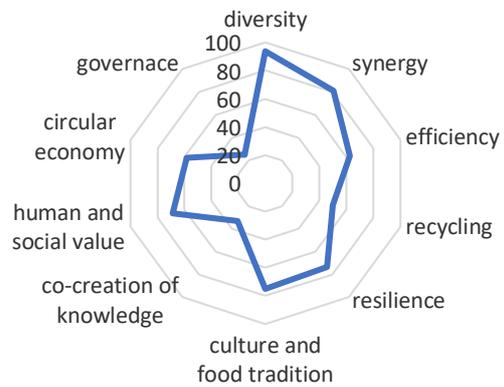


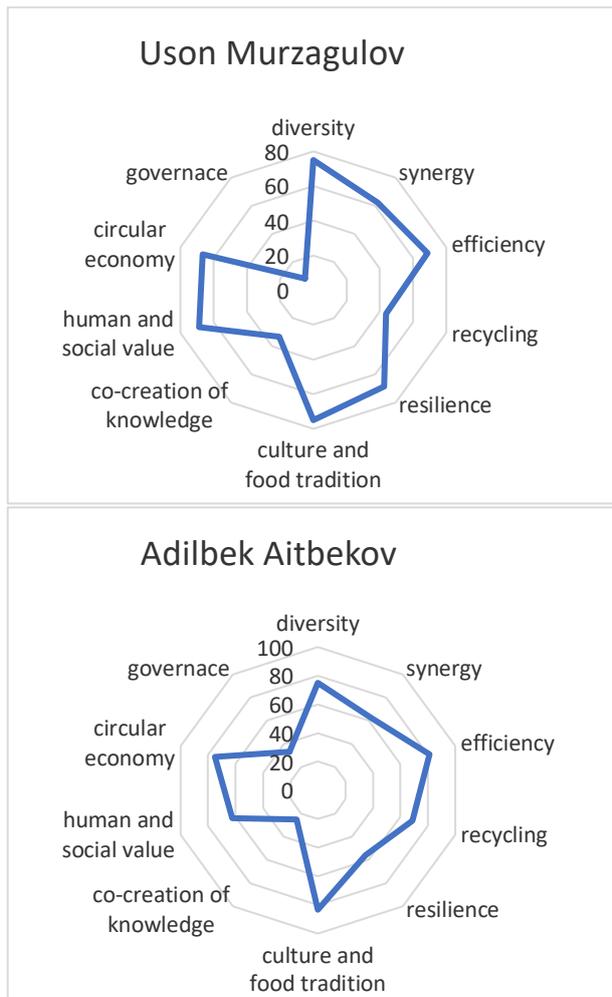
Group 3 (Families: 8-11. Altitude of the village 1.500-1.400m)

Turgunbai Kozubaev

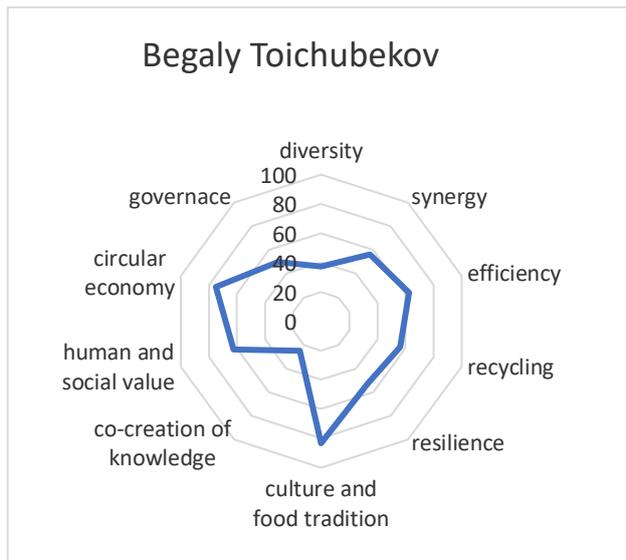


Almaz Turgunbaev

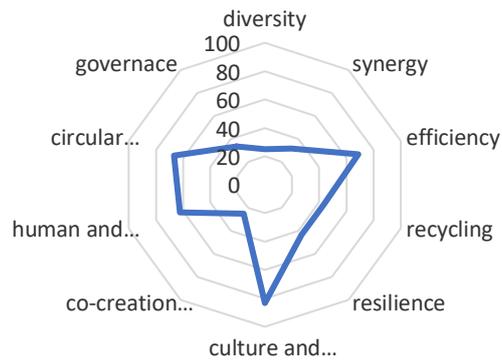




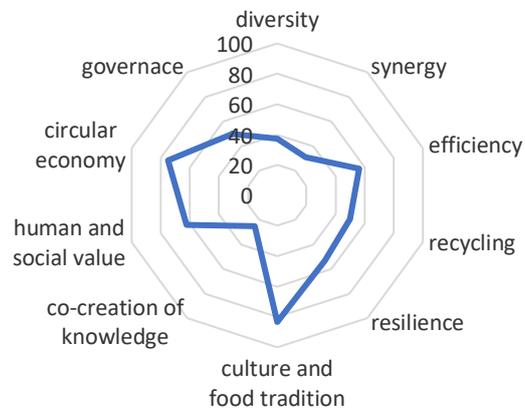
Group 4 (Families: 12-16. Altitude of the village 1.200m)



Doolot Orozbaev



Talai Ismanov



Bakytbek Oskonov

