PROTOCOL

Meetings in pilot districts Ismayilli and Shamakhi

13th – 14th of July 2019

1st focus group discussion: Wheat farmers & local authorities in Sabir village, Shamakhi district

- Small village close to the district centre (south-east)
- Main source of income: agriculture
- No livestock, mainly wheat, a little bit of vineyards
- During Soviet time vineyards, before mainly cattle breeding and some wine
- Groundwater? Not used
- Snow: Important as melt water from higher regions
- Cultivation practices: Mainly wheat - no rotational schemes
- Problems with irrigated areas:
    - Areas in Soviet times were vineyards, with reservoir, now irrigation infrastructure is mostly destroyed
    - Amount of water in river has decreased, today not enough water from river
    - Impression that there is lack of water - maybe upstream they take too much?
    - In Soviet times river was never dry
    - Rainfall was going back. Main period when rainfall is needed: August
    - Possibility for reconstruction: Plans exists, but no financing, no advice
- Climate change observed (perceived):
    - Higher temperature
    - Low level of precipitation
    - Change of cycle of rain: Previously in May, now in June
    - For wheat it is important to have rain in April & May --> **indicator**
    - Snow: observed decrease in snow level. In 1970s a lot of snow. Snow melt important (April-May)
- Land use change:
    - In Soviet times: wine cultivation most important, not mainly wheat like today
    - Vineyards were destroyed because of anti-alcohol campaign. Now slowly they are coming back
    - Grapes need more water, but since it is green it has also positive effects (erosion control, good for health)
- Management of water important:
    - No reservoir, would be needed
    - In Soviet times water conflicts (vineyards need more water) – now coming back
    - Farmers would like to drill for water, but lack of finance
- Erosion + landslides:
    - There is an area east of the river which is prone to erosion & landslides
    - Before the areas were vineyards, which protected from soil erosion. Now it is wheat --> more prone to erosion
    - Construction of roads contribute to erosion and landslides.
    - Erosion mainly in steeper terrain
- Floods: No major problems in their area
- Consequences of climate change:
    - Year by year the productivity of the soil goes down, it is already at the limit of productivity. **If it gets worse, they have to move away**
    - Farmers do not have appropriate crop rotation system

Picture 1: Participants of the focus group discussions in Sabir village.

Picture 2: The head of Sabir municipality marking landslide-prone areas on a map.

2nd focus group discussion: Regional Forestry Department, Shamakhi & Ismayilli

- In total 84.000 ha of forest (Ismayilli + Shamakhi) under their management
- In Soviet times droughts observed – preventing/mitigating actions were applied
- This year some diseases - water flies ---> especially in lower part of the forest
- In the last years: too much precipitation
- Increasing number of wildlife (bear, wolf)
- In Ismayilli: 7 types of climate
- In winter less snow, "hot" winters --> less water available for forest in summer
- In general: Climate in the forest zone is getting warmer and more humid, which creates favourable conditions for pest and diseases
- In summer: Heat stress is a problem for many tree species
    - Particularly vulnerable: walnut (decrease in productivity)
    - More drought resistant tree species: oak, pistachio
- In Soviet times: Too many pesticides applied to cotton plantations -> harm to bees
- Increasing risk of forest fires:
    - Now forest fires start earlier (no snow), can be observed already in January. Mostly only close to agricultural areas
    - Tree species composition is almost natural; has a high adaptation potential.
- Anthropogenic impact: After collapse of Soviet Union very bad (high demand for fire wood) but now already better (natural gas is provided)
- Increase of forest line? Yes, is observed
- Grazing in forest: Only relevant close to city centres. In other regions no problem, since enough summer pastures
- Problem with heavy rain events --> landslides
- Pastures are often situated in the forest areas
- In Soviet times: According to plan, there were some open forest areas which could be used for pastures. But now these areas should be used as forests. There is a plan to rent this to locals for agro-forestry (e.g. 70% of the yield could be kept by inhabitants, 30% goes to forestry department)
- Which are the most vulnerable land-use forms in the area?
    - Most vulnerable: Rain-fed agriculture (no snow in winter, drought, diseases --> low yields, productivity is going down)
- Landslides:
    - Triggered by rain, but also overgrazing has an effect
    - Additional pressure by summer pasture farmers from lowlands: Number of sheep increasing
    - Should be 6-8 sheep / ha, but some have > 20.
    - Biggest effect on landslide risk: Steep slopes
- Change in cultivation patterns: To burn fields after yield was good, it killed diseases, now not allowed anymore
- Hotspots in the region: Agricultural fields, low-lying forests close to roads
- Critical indicator: Series of days above 35 °C – trees not able to cope anymore if prolonged days (i.e. more than 3) of heat

Picture 3: Representatives of the forestry department pointing out particular hotspots on the map.

Picture 4: Forests in mid-altitude zones which are situated far away from settlements and roads are generally in a good shape.

3rd focus group discussion: Farmers in the village of Cülyan, Ismayilli district

- Cülyan village: 118 inhabitants - 24 families - 8 settlements
    - Outmigration: In Soviet times already, also today: No opportunities for young people
    - Population remained more or less the same over the last years, even going down a little
- Main agricultural / livelihood activities:
    - Mainly inhabitants engage in cattle breading, some sheep, some dairy farming. A little bit of fruits, walnuts, kitchen gardens
    - At current agricultural practices, the area could not host more people --> erosion problems could occur. If land resources were effectively used, however, it could even host more
- Land degradation at higher altitudes is a problem (from 2000 – 2100m a.s.l. & upwards), mainly on state pasture lands. There monitoring is under Ministry of Agriculture and not done properly.
- Effects of climate change? It is getting hotter, amount of snow is getting less and less
- Effects of the reduction in snow cover:
    - Disadvantage: less water in spring
    - But also advantage: earlier start of vegetation period --> higher productivity
- Earlier start of the season can bring problems for vegetation + fruit trees growing --> more vulnerable to early frost
- Longer vegetation period: More hay can be harvested (more cuts possible), could have positive effects on pasture productivity
- Springs: In July – August springs can dry up, but only in dry years. Problems with water occur mainly in deforested areas; forest areas store enough water
- Water availability: In summer mainly precipitation (no glacier in catchment)
- In dry years: Main problem with dry springs is that cattle has longer ways to water sources. This reduces productivity + leads to land degradation
- Erosion / landslides:
    - Problem in certain areas (overuse)
    - Prolonged dry period promote landslides (more erosion, less vegetation cover)
- Floods:
    - Not a big problem for agricultural production / livelihoods, as no agricultural fields are situated in flood areas
    - But: Important access roads are often blocked. Mainly in winter, if there is flooding, but also in summer -> happens up to 10 times per year
    - Settlements then are not accessible for a certain period, villagers often have to clear the road themselves – lack of funds for proper construction / maintenance

Picture 5: Discussing the different agro-ecological zones of the region

Picture 6: A farmer of Cülyan village showing a pilot plot cultivating chia seeds in his lush garden.