

## Appendix 2 – ELD Georgia pre-valuation and post-valuation workshop outcome document

The following document summarises the outcome of national and local workshops that were held in the lead up to and during the finalisation of the ELD valuation study in Georgia. The first two workshops were crucial to defining the direction of the study, the ecosystem services to be valued and issued that merited special attention. The final workshops served to provide critical feedback and validation of the results of the study.

### ELD Georgia re-valuation workshop outcome

In the lead up to the economic valuation assessing the case for banning crop residue burning in Georgia, two workshops were conducted at the end of January 2016. One was held at the national level in Tbilisi, where stakeholders from Ministry of Environment, Ministry of Agriculture, the Academy of Sciences and representatives of farmers and shepherds associations were represented. The other was held in the Dedoplistskaro municipality, where farmers, herders and decision-makers from the municipality and the local parliament were present. A summary of the main outcomes of relevance to the valuation study is provided in the following.

### Pre-valuation workshop at the National Level, Tbilisi, 25th January 2016

The three main themes that were discussed in the workshop concerned the main impacts of wildfires; why farmers engage in crop residue burning; and what can be done at the national and local level to incentivise a change away from current land use practices.

In terms of the most negative impacts of wildfires escaping the from the fields where the fire was lit, most workshop participants pointed towards the devastating financial implications, including the burning down of perennial systems such as vineyards and fire-windbreaks and unharvested wheat from adjacent farmland. One participant claimed that of thousands of unharvested wheat were burned last year in Dedoplistskaro. A representative from the National Forest Agency also highlighted the grave consequences of fires escaping into forests and protected areas – destroying areas of cultural and recreational importance and undermining progress on implementing international environmental conventions.

There were different views about why farmers choose to burn their residues, as oppose to integrating them into the soil and/or collecting the residues. The dominant view was that farmers do it simply because they have no other options and cannot afford to shred or integrate, collect and compress residues. Amongst participants from the Ministry of Agriculture there was a concern or a belief that farmers are not be ready to stop crop residue burning. Some participants also claimed that farmers perceive burning as being good for the soil.

There was a general consensus amongst all workshop participants that farmers lack an understanding of the long-term implications of their practices on-site (their farm) and off-site. It was thus acknowledged that any policy on crop residue management has to be accompanied with education and training of farmers.

Most important of all, workshop participants were preoccupied with the need for alternative uses of crop residues to be available to farmers. One participant from the MoA stated: *“If we prohibit the burning of residues we need to offer farmers something in the way of compensation ... We can say that fire damages fertile soil but what can we do to stop these processes if there is no alternative to burning?”*<sup>38</sup>

Alternative uses of residues – such as bio composting, construction material, animal fodder and the transporting of residues to Turkey for processing – were mentioned, as well as the need to assess of the financial viability of these options.

The final stage of the workshop served to elicit what the workshop participants considered as the most important and urgent policy priorities, so as to deal effectively with the increasing incidence of wildfires originating in the farming sector. The exercise also served to understand the importance that workshop participants attributed to the development of ‘alternatives’ relative to other policy priorities, such as enforcing and banning residue burning.

Each participant was given two votes: most important and second most important. The final outcome demonstrated that there was more support for developing immediate alternative uses of residues from which farmers can derive and income – rather than the actual ban on residue burning. The workshop was finalised by leaving participants with an open question: Is it likely that alternative economic uses of residues will develop as long as the cheap option – residue burning – is allowed? Maybe an actual banning of burning will help create a real push for the development of alternative technologies?



TABLE A 2.1

**Participants at the pre-valuation national level workshop**

#	Name	Organization	Position
1.	Maka Manjavidze	Land Resource and Water Protection Service, MENRP	Chief Specialist
2	Tamar Loladze	Waste and Chemicals Management Service, MENRP	Chief Specialist
3	Neli Korkotadze	Environmental Supervision Department, MENRP	Chief Inspector
4	Natia Iordanishvili	Maintenance and Reforestation Department, National Forestry Agency	Head of Department
5	Lika Giorgadze	Forestry Policy Service (FPS)	Specialist
6	Lasha Khizanishvili	Forestry Policy Service	Chief Specialist
7	Teona Kerashvili	Forest Policy Service (FPS)	Assistant
8	Eka Sanadze	Ministry of Agriculture	Head of Soil Department
9	Jimsher Koshadze	Ministry of Agriculture	Legal specialist
10	Giorgi Gambashidze	Scientific Research Academy of Georgia	Head of Laboratory Soil Fertility Research Service
11	Gela Gligvashvili	Scientific Research Academy of Georgia	Professor
12	Sopiko Akhobadze	RECC	Executive Director
13	Ana Bokuchava	Georgian Farmer Association	Project Coordinator
14	Olga Weigel	GIZ	Advisor
15	Hannes Etter	ELD Initiative	Scientific Desk Officer
16	Lindsay Stringer	University of Leeds	Expert
17	Stacey Noel	Stockholm Environmental Institute	Expert
18	Vanja Westerberg	ALTVS Impact	Expert
19	Malkhaz Adeishvili	UNIDO	Economic expert
20	Nanuli Chkoidze	Interpreter	Interpreter

**Key outcomes of relevance to the valuation study**

The main outcomes of the workshop that has direct relevance to the valuation study include the following observations:

- The main concerns of fires are their direct and indirect damage to unharvested wheat fields, vineyards and windbreaks. These need to be assessed in the valuation study. Lost cultural heritage and recreational values also need to be considered and if not valued then at least given recognition as another cost associated with poor wildfire management.
- It is important to learn more about farmers' true preferences over residue management and how much they would need to be compensated to forego the burning of crop residues. A stated preference valuation exercises may be undertaken for this purpose.
- It is important to include a financial assessment of potential uses of residues in the valuation study. This assessment should be as close as possible to any realistic investment that could materialise in the Shiraki valley. Otherwise it will lack relevance and credibility.

### Pre-valuation workshop at the district level, Dedoplistskaro municipality, 26th of January 2016

The workshop in Dedoplistskaro included farmers, shepherds, representatives from the Forest Policy Service, the fire brigade, the APA Vashlovani protected area, the local municipal administration and parliament. All participants were attentive and interested in the questions that were discussed.

At the outset of the workshop, participants provided some background on weather related trends. Pastoralists and farmers alike highlighted the increasing incidence of very warm summers, stating that when they started farming one year out of five would be 'abnormal i.e. very hot with low precipitation levels' and now that ratio had been inversed. The consequences of the aggravating weather patterns are less productive pastures compounded by overgrazing, low agricultural yields

and the increasing likelihood of uncontrollable wildfires, like the one seen in the summer of 2015.

The most negative impact of the 2015 fires as perceived by farmers is the damage they have done to windbreaks. One farmer said, *"I have 5 hectares of farmland and all the windbreaks have burned down. There are no windbreaks left to protect in the landscape now"*.

As for the impact of burning on the soil, another farmer said: *"Everybody knows that burning is not good, but the alternatives are too expensive. An efficient harvester and residue shedding machine cost 120 GEL/ha to rent, double that of a traditional harvesting machine"*.

In general, there was wide agreement within the room that handling residues appropriately is prohibitively expensive for farmers. Other factors which compound this situation, were mentioned, namely:

T A B L E A 2 . 2

#### Participants at the workshop at the district level

#	Name	Organization	Position
1	Hannes Etter	ELD Initiative	Scientific Desk Officer
2	Stacey Noel	Stockholm Environmental Institute	Expert
3	Lindsay Stringer	University of Leeds	Expert
4	Vanja Westerberg	ALTVS IMPACT	Expert
5	Benashvili Giorgi	Ministry of Agriculture	Local representative
6	Kikilashvili Giorgi	Farmer	Farmer
	Topchishvili Besik	Farmer	Farmer
7	Nateladze David	Farmer	Farmer
8	Cherkezishvili Vazha	Vashlovani Friends Association	Head of Association
9	Tavadze Dachi	Vashlovani Friends Association	Member of Association
10	Gaprindashvili Pridon	Association "Tushi Shepherds"	Head of Association
11	Metreveli David	Association "Tushi Shepherds"	Member of Association
12	Rekhviashvili Nikoloz	Association "Tushi Shepherds"	Member of Association
13	Malkhaz Merabishvili	Dedoplistskaro Municipality	Head of Coordination Department
14	Javakhishvili Zviad	Dedoplistskaro Municipality	Chairman of Dedoplistskaro Municipality
15	Kodiashvili Amiran	GIZ	Field Coordinator
16	Weigel Olga	GIZ	Advisor
17	Martkoplishvili Ilia	Journalist	Journalist
18	Giorgadze Lika	Forest Policy Service	Specialist
19	Chkoidze Nanuli	Interpreter	Interpreter

- 1) Before the wheat has been harvested and sold, farmers have no cash. It is therefore not an appropriate moment to pay for the rental of disk plowing, combined harvester and shedder or tractors to collect and compress residues.
- 2) The company that rents out the modern tractors is state-owned and is therefore likely to be earning monopoly rents, resulting in higher rental prices than what would happen in a competitive market for farmland machinery.
- 3) The moment at which the residues should be integrated into the soil or collected is around the same time that farmers are processing and selling their wheat harvests. The opportunity cost of time is therefore high at this moment of the year.
- 4) Farmers in the Shiraki do not have access to accurate weather data. Timing of harvest or burning is therefore not necessarily optimal (I need a bit more info on this to understand this).

The many disincentives to stop burning and manage residues differently led to calls for finding financially interesting uses of the residues. Participants argued that with appropriate investments in processing facilities, residues could be used for/as:

- Fertilisers and mulching;
- Construction material;
- Input into mushroom production;
- Heating;
- Forage for animals.

However, in all of these cases, outside investments may be necessary, though it appears that there are some financially and socially interesting opportunities. For example, livestock owners in the room mentioned that if the straw residues were milled into edible residues they would buy it during winter months for their animals. The fact that pastures are overgrazed and livestock owners in the Shiraki valley purchase imported foodstock makes this a particularly interesting option to analyse as part of the valuation study.

### Key outcomes of relevant to the valuation study

The main outcomes of the workshop that has direct relevance to the valuation study include the following observations:

- At the local level, there is a good understanding of the direct and indirect problems caused by crop residue burning and there is an interest among farmers (at least those present in the workshop) to manage residues differently. These attitudes stand in contrast to the perception that national workshop participants from the MoA had about farmers, arguing: 'They are not ready for change'. In case there is a significant divergence between farmers' attitudes and what the government officials perceive, it is of relevant to rectify these through the valuation survey. Efforts will thus be made to understand the true preferences of farmers regarding alternative land use and residue management scenarios as well as the minimum compensation demanded to accept a legislative ban of residue burning.
- It is prohibitively expensive for farmers to rent the equipment needed for shredding, collecting or integrating residues in the soil. In order for farmer to justify or afford such expenditures, it is of key interest to find and develop alternative uses that can allow farmers to earn a margin on the crop residues. The need to investigate the feasibility of alternative residue uses is in agreement with outcomes from the workshop at the national level.

## ELD Georgia post-valuation workshop outcome

### Post-valuation workshop at the District Level, Dedoplistskaro, 1st of June 2016

A lot was learned from the post-valuation workshop in the Dedoplistskaro district. The workshop started out with a presentation of the preliminary results from the valuation study. It covered:

- A presentation of basic socio-demographic and attitudinal information of the 300 farmers that had been interviewed as part of the valuation survey.
- The main results of a choice experiment study undertaken as part of the valuation survey. This included survey respondents expressed Willingness to Pay to enforce a ban of burning, and their willingness to accept compensation to forgo the protection of remaining windbreaks.
- An exposition of the marketable value of straw and the benefits of integrating straw into the soil. The additional costs to farmers associated with handling residues differently than burning was also taken into account.
- Finally, a basic cash-flow analysis an economic feasibility assessment of installing a fuel pellet producing facility was presented. This included all relevant aspects on the 'demand side, the supply side and the production side' of installing such a facility.

Getting through the presentation took one hour longer than initially anticipated. The audience vividly engaged in what was presented and that included a fair amount of confrontation with regards to specific data that was presented.

Several reasons can explain this, including the following:

- Powerpoint slides were not correctly translated which caused some confusion.
- The translator did not stick to simply translating what the presenter said, but rather engaged in the discussion and provided her own views. This made the presentation unnecessarily long.
- For the ease of the valuation study, price data on straw was converted from 'straw bales' into 'tons of straw'. This made it difficult for farmers to evaluate the legitimacy of what was being presented.
- For the ease of valuation, some figures were converted from their 'local unit' to 'internationally recognised units, such as tons of straw instead of straw bales. This made it difficult for the critical part of the audience to quickly evaluate the legitimacy of the numbers provided.
- The presentation was comprehensive and covered all the ecosystem services and costs that had been valued as part of the study. Some of the results were not directly relevant to farmers. In the light of a long presentation compounded by above-mentioned factors, it would have been more appropriate to leave out those costs and benefits that did not directly speak to farmers.
- One of the figures presented, namely price-information on straw bales, was questioned by the audience.
- All these were compounded by the presence of one particularly controversial individual in the audience.
- In trying to explain the behavior of that individual, interviewers from RECC argued that that the farmers who were present in the workshop had participated in several related workshops by that time and were fed-up with "talking". They wanted action now. As one farmer argued during the workshop: "We know burning is not good, but give us alternatives now". RECC interviewers highlighted that farmers in rural villages (outside the city of Dedoplistskaro itself) would have benefited significantly more from this kind of workshop as they had very little knowledge of the problems associated with crop residue burning.

Despite the above-mentioned difficulties, several important lessons of relevance to the valuation study were learned from the workshop in Dedoplistskaro. These includes:

- The discovery of issues associated with inconsistent data entry of the valuation questionnaire and subsequent rectification of results.
- The incorporation of additional costs into existing cost benefit estimates. In particular, costs associated with crop residue collection were upward adjusted to account for the opportunity cost of time - in the valuation study itself.
- There was also a farmer within the audience who had 3 years of experience with not burning. He shared his experience with the other farmers, bringing the results of the study to life.

Overall the workshop offered a number of useful lessons for everyone, including ideas and recommendations about ‘what to avoid’ or be careful about in similar workshops with local stakeholders in the future.

### Post-valuation workshop at the National Level, Tbilisi, 3rd of June 2016

In comparison to the workshop at the local level, the workshop with national decision-makers ran smoothly. The workshop started out with a presentation of the valuation study. Simultaneous translation ensured smoothness and good understanding of the study results and the overall process by the audience. As a result there were few (or any at all?) requests for clarification by the audience.

It was highlighted in the discussions after the presentation that it would be important to disseminate the report and the results as widely as possible in Georgia. Notably, that every municipality should have a policy brief and the full report.

TABLE A 2 . 3

#### Participants at the post-valuation workshop in Dedoplistskaro

#	Name	Organization	Position
1	Hannes Etter	ELD Initiative	Scientific Desk Officer
2	Vanja Westerberg	ALTUS IMPACT	Expert
3	Olga Weigel	GIZ	Advisor
4	Kodiashvili Amiran	GIZ	Field Coordinator Dedoplistskaro region
5	Zaza Badurashvili	GIZ	Project Assistant
6	Manana Kodiashvili		Interpreter
7	Lika Giorgadze	FPS, MoE	Specialist
8	Giorgi Arabuli	REC Caucasus	Biodiversity Monitoring Specialist
9	Evgenia Mekhtievi	REC Caucasus	Socio-economic group leader
10	Iago Khochiashvili	Ministry of Agriculture	Farmer
11	Giorgi Ghambashidze	Scientific Research Center of Agriculture	Head of Laboratory of Soil Fertility Research Service
12	David Nateladze		Farmer
13	Vazha Cherkezishvili	Vashlovani Friends Association	
14	Malkhaz Merabishvili	Dedoplistskaro Municipality	
15	Omar Tedoradze	Ministry of Agriculture	Deputy Head of Sectoral Development Service
16	Giorgi Benashvili	Ministry of Agriculture	Head of ICC
17	Dachi Tavadze	Vashlovani Friends Association	
18	Giorgi Kikilashvili		Farmer
19	Martkoplshvili Ilia	Newspaper Shiraki	Journalist
20	Nodar Kharnauli		Operator

TABLE A 2 . 4

**Participants at the post-valuation workshop at the national level**

#	Name	Organization	Position
1	Maka Manjavidze	Land Resource and Water Protection Service, MoE	Chief Specialist
2	Nino Chikovani	Land Resource and Water Protection Service, MoE	Head
3	Irma Gurguliani	Waste and Chemicals Management Service, MoE	Deputy Head
4	Neli Korkotadze	Department of Environmental Supervision, MoE	Chief Inspector
5	Maia Chkhobadze	Department of Environmental Supervision, BCD MoE	Head of BCD Dep.
6	Natia Iordanishvili	NFA	Deputy Head
7	Jimsher Koshadze	MoA	Legal specialist
8	Giorgi Ghambashidze	SRCA	Head of Laboratory Soil Fertility Research Service
9	Sopiko Akhobadze	RECC	Executive Director
10	Evgenia Mekhtievi	RECC	Socio-economic group leader
11	Giorgi Arabuli	RECC	Biodiversity Monitoring Specialist
12	Carlo Amirgulashvili	FPS, MoE	Head
13	Amiran Kodiashvili	GIZ	Local coordinator
14	Olga Weigel	GIZ	Advisor
15	Hannes Etter	ELD Initiative	Scientific Desk Officer
16	Vanja Westerberg	ALTUS Impact	Expert
17	Lika Giorgadze	FPS, MoE	Legal Specialist
18	Christian Gönner	GIZ	Team Leader
19	Nana Chkhoidze		Translator
20	Konstantin Khachapuridze	Department of Environmental Supervision	Head of Integrated Environmental Control Service
21	Natia Kobakhidze	GIZ	Senior advisor

Giorgi Ghambashidze, head of laboratory at the Soil Fertility Research Service in Georgia, presented his results of the agronomic analysis that he had done of soils that have been burned and not burned. His presentation highlighted the complexity of soils and how their functions and structure change as a result of burning. Through his presentation he made it clear, that integrating residue does not only help build up organic matter and nitrogen content but also reduces the capacity of soils to retain water and the level of biological activity which is fundamental to help build organic matter.

Following Giorgi's detailed and interesting presentation, a range of different issues were discussed, including:

- How to help farmers those farmer who would like to avoid burning to access more expensive farm machinery which can allow for residue shredding. It was highlighted that at the time when grain is harvested, it has not yet been sold and so farmers have limited financial means. Discussions over pricing with the state owned company Mechasinatory Ltd were deemed necessary and justified, given that it is in the State's interest to help improve on livelihoods and the environment in the Dedoplistskaro district.



- The code of waste management, which prohibit the burning of waste and farm waste. It was questioned why is it necessary to implement a new law to ban burning of crop residues when there is already an existing legal mechanism. No conclusion was drawn on this.
- Whether it would be possible to obtain funding from the carbon market from avoided burning. This was considered rather limited given that the voluntary carbon market is currently flooded in carbon credits and other carbon trading market Joint Mechanism and the CDM under the Kyoto protocol are no longer in operation. It was nevertheless highlighted that there could be scope for exploring financing opportunities through Land Degradation Neutral Fund of the Global Mechanism. There was however no further deliberation on this point.

In general, there was consensus within the room that the burning of crop residue should come to an end. One participant, Mr. Jimsheer Koshadze, from the MoA however claimed that banning of crop residue burning would ultimately hurt farmers. That was not a popular claim amongst the remaining participants and so much of the discussions were focused on countering his claims.

Finally, although there was no clear course of direction in the deliberation following the presentations on the valuation study and the agronomic study the workshop certainly served as an important platform for brainstorming on the minds of the stakeholders that were present.