Karto-Zan language of Georgia

[vxlet͡ʃh]	I split	[saxɬʃi]	at home
[t͡ʃet͡ʃxli]	fire	[kała]	tin
[zarali]	loss	[pepeła]	butterfly
[t͡ʃoli]	wife	[kbiłs]	tooth
[xeli]	hand	[łxena]	joy
[kleba]	reduce	[erthxeł]	once
[leło]	goal	[xoło]	however
[łamazad]	prettily		

Are [l] and [ł] allophones of the same phoneme?
- [l]: light [l]; alveolar lateral approximant
- [ł]: dark [ł]; velarized alveolar lateral approximant (tongue raised towards the velum as secondary articulation)

1. Find minimal pairs with [l] and [ł].
   - If none, move ahead.
2. Check for complementary distribution
   - List out the environment in which the each phone occurs.
   - Use hash symbol (#) to indicate word boundary and underline (_) for the phone.

[l]	[ł]
x_e	e_o
x_i	#_a
a_i	x_ʃ
o_i	a_a
e_i	e_a
k_e	i_s
#_e	#_x
	e_#
	o_o

3. Simplify the environment. Do the sounds occur in overlapping contexts, or is there a pattern – a particular context where one of the sounds occurs, and the other doesn't?

[l]	[ɬ]
_e	_o
_i	_a
	_ʃ
	_s
	_x
	_#

- [l] occurs only before the front vowels [e] and [i], while [ɬ] occurs only before the back vowel [o], the central vowel [a], the voiceless fricatives [ʃ], [s], and [x], and the end of the word.
  - These phones appear to be in a complementary distribution. This is classic complementary distribution, because these are exactly opposite environments: front vowels are not back or central vowels, they are not voiceless fricatives, and they are not word boundaries. Neither phone of interest seems able to appear in the environment of the other.
    They may be the allophones of the same phoneme.
4. Check for phonetic similarity. [l] and [ɬ] have:
- same phonation (voiced)
- same place of articulation (alveolar), and
- same manner of articulation (lateral approximant)
- They differ only in secondary articulation (velarized or not) —> High degree of phonetic similarity.
  - Conclude they are allophones of the same phoneme.
5. Identify the phoneme (default allophone).
- Find the phone with broadest distribution, i.e., occurs in the widest variety of environments.
- [ɬ] occurs in many distinct environments that are all dissimilar from each other, so it is the default allophone.

[ɬ] and [l] are the allophones of /ɬ/ where [ɬ] is the default phoneme.