

**Supplementary material Table S2.** Archaeological and modern macrobotanical assemblages derived from agroecological practices in the Joyagzhí terraces and Nizag community

Functions / Techniques	Agroecological practices	Taxa identified in the macrobotanical assemblages	
		Archaeological context	Ethnobotanical context
<b>Soil conservation</b>			
Organic fertilization	Production of green manures for <i>Zea mays</i> crops	<i>Phaseolus vulgaris</i> , <i>Lupinus mutabilis</i> , <i>Vicia andicola</i> and <i>Trifolium amabile</i>	<i>P. vulgaris</i> and <i>L. mutabilis</i>
	Cover crops	<i>Calandrinia ciliata</i> , <i>Arenaria lanuginosa</i> , <i>Oxalis latifolia</i> , <i>Rumex andinus</i> , <i>Urtica leptophylla</i> , <i>Verbena litoralis</i> and <i>Plantago linearis</i>	<i>Cucurbita</i> spp. and <i>Calandrinia ciliata</i> for <i>Z. mays</i> crops  <i>Amaranthus quitensis</i> and <i>Phenax rugosus</i> for <i>Solanum tuberosum</i> crops
Erosion control	Crop diversification	<i>Z. mays</i> – <i>L. mutabilis</i> – <i>P. vulgaris</i>	<i>Z. mays</i> – <i>L. mutabilis</i> – <i>P. vulgaris</i> – <i>Cucurbita maxima</i> – <i>C. ficifolia</i>
		<i>Dysphania ambrosioides</i> - <i>Chenopodium petiolare</i> - <i>Amaranthus spinosus</i>	<i>S. tuberosum</i> – <i>D. ambrosioides</i> – <i>A. quitensis</i>
	Redeposition of organic soil in terraces of the Quechua area	Depositional sequences of macrobotanical assemblages	<i>Ullucus tuberosus</i> - <i>Oxalis tuberosa</i> - <i>Tropaeolum tuberosum</i> Macrobotanical palimpsests
	Construction of terraces in the Quechua area	<i>Z. mays</i>	<i>Z. mays</i>
<b>Conservation of agrobiodiversity</b>			
Control of pests and diseases	Burning infected crops	<i>Z. mays</i> , <i>P. vulgaris</i> and <i>L. mutabilis</i> in permanent fields and terraces of the Quechua zone	<i>Z. mays</i> and <i>L. mutabilis</i> in permanent fields of the Yunga and Quechua agroecological zones
	Trap plant crops	<i>Nicandra physalodes</i> for <i>Z. mays</i> crops	<i>N. physalodes</i> for <i>Z. mays</i> crops
<b>Water supply</b>			
Water retention	Construction of terraces in the Quechua agroecological zone for crops of <i>Z. mays</i>	<i>Z. mays</i>	<i>Z. mays</i>
<b>Climate resilience</b>			
Plant barriers	Shrub barriers	<i>Armatocereus godingianus</i> , <i>Cavendishia bracteata</i> , <i>Cyperus aggregatus</i> , <i>Passiflora ampullacea</i> , <i>Passiflora</i> sp., <i>Phytolacca rivinoides</i> , <i>Rubus roseus</i> and <i>Vaccinium</i> sp.	<i>Agave americana</i> , <i>Echinopsis pachanoi</i> and <i>A. laetus</i>
	Intra-crop barriers for the protection of <i>Z. mays</i>	<i>L. mutabilis</i>	<i>L. mutabilis</i>