

## F A C T S   a n d   F I G U R E S :

### Pilot systems' globally significant agricultural biodiversity

Pilot GIAHS	Significant Agricultural biodiversity and Associated biodiversity
<p><b>Chile</b></p> <p>Chiloe Island</p>	<p><b><u>Agricultural biodiversity:</u></b> Chiloe Island is one of the Vavilov centers of origin of crop diversity. It is a centre of origin of potatoes (<i>Solanum tuberosum</i>), and a centre of mango (<i>Bromus moango</i>) and strawberry (<i>Fragaria chiloensis</i>). Some 200 documented varieties of native potatoes are still managed today, together with a variety of garlic (Ajo chilote) that is unique to the islands and its volcanic soils. The island supports an indigenous horse race, the hardy Caballo Chilote.</p> <p><b><u>Associated biodiversity:</u></b> WWF has listed Chiloe Island as one of the 25 priority areas for ecosystem conservation in the world. Both primary and secondary temperate rainforest are found on Chiloe Island in the patchwork landscape shaped as a result of 10,000 years of co-evolution with human livelihoods. They hold a wide range of species including 15 rare to endangered bird species, 33 endemic species of amphibians (3 rare to endangered), 9 species of endemic mammals (all rare to endangered), and 4 species of vulnerable to endangered freshwater fish; Wild species provide fruit (8 species), dyes (9 species), ethno-medicines (41 species) and used for sculpture (5 species).</p> <p><b><u>Ecosystem functions:</u></b> Field hedges and the adjacent forests support pollinators and pest predators. Seaweed and washed-up cuttlefish are used for soil improvement.</p>
<p><b>China</b></p> <p>Rice-Fish Agriculture</p>	<p><b><u>Agricultural biodiversity:</u></b> Rice paddies (20 native rice varieties; many threatened), home gardens, and livestock / poultry; Trees and field hedges; Numerous native vegetables and fruits including lotus roots, beans, taro, eggplant, Chinese plum (<i>Prunus simoni</i>), mulberry; 6 native breeds of carp.</p> <p><b><u>Associated biodiversity:</u></b> 5 species of fish, and amphibians and snails in paddies; 7 species of wild vegetables collected in borders of fields; 62 forest species are used (21 as food); 53 medicinal plants</p> <p><b><u>Ecosystem functions:</u></b> Integrated use of forest (70% of water catchment) and managed rice-fish interactions for nutrient recycling, pest control and high quality protein production from organic waste material; Use of 4 species of <i>Azolla</i> for nitrogen fixation and protein rich fish food; Use of trees in field and hedges for pest control (ethno-pesticides or habitats for beneficial insects)</p>
<p>Oases of the Maghreb</p> <p><b>Algeria:</b> Béni Isguen,</p> <p><b>Tunisia:</b> Gafsa</p>	<p><b><u>Agricultural biodiversity:</u></b> 50 date varieties in Gafsa, Tunisia; 100 in Beni, Algeria. A wide range of fruits (pomegranates, figs, olives, apricots, peaches, apples, grapes, citrus) and cereals, vegetables, spices, medicinal species, forage and ornamentals.</p> <p><b><u>Associated biodiversity:</u></b> Migratory birds, Gazelle (<i>Gazella cuvieri</i>), Fennec (<i>Vulpes zerda</i>)</p> <p><b><u>Ecosystem functions:</u></b> The three tier system (palms; shrubs and fruit trees; ground crops) creates conditions suited for water conservation and micro-climate regulation; Management of inter- and intra-species interactions for pest and disease control and efficiency of water and nutrient uses; Efficient water-use and reduced land degradation</p>
<p><b>Peru</b></p> <p>Andean Agriculture (Incan Farming System)</p>	<p><b><u>Agricultural Biodiversity:</u></b> Primary centre of origin of potatoes, quinoa, kañiwa, chilis, the chinchona tree, the coca shrub, oca, olluco, mashwa), amaranth, leguminous plants such as beans and lupins, and roots such as arracacha, yacón, mace and chagos; Extraordinarily polymorphic groups of the soft corn have been differentiated; Domestication of llamas, alpacas and guinea pigs.</p> <p><b><u>Baseline Caritamaya:</u></b> Potatoes (28 varieties). Bitter potatoes (13 var.) Quinoa (43 var.), Kañiwa (8 var.), Oca, Olluco, Llamas, Alpacas (all 24 colors, 3 mayor breeds)</p> <p><b><u>Baseline Microcuenca de San José:</u></b> Potatoes (80 var.), Mashua (14 var.), Olluco (18 var.), Kañiwa (12 var.) Oca (20 var.) Llamas, Alpacas</p> <p><b><u>Baseline Cuenca de Lares:</u></b> Potatoes (177 var.), Oca (20 var.), Olluco (11 var.), Mashua (17 var.), Maiz (23), Quinoa, Kañiwa, Lupins, Llamas, Alpcas, wild relatives</p> <p><b><u>Baseline Micro de Carmen:</u></b> potatoes (105 var.), Oca (25 var.) Olluco (14 var.), Mashua (20 var.), Maiz (34), Quinoa, Kañiwa, Lupins, Llamas, Alpcas, wild relatives</p> <p><b><u>Associated biodiversity:</u></b> Vicuña; Endemic grassland and wetland birds (including many North American migrants); Wild medicinal and food plants; Wild crop relatives</p> <p><b><u>Ecosystem functions:</u></b> Climate regulation through water management (waru waru, qochas); Hedges for pest and disease control; Land degradation control through terracing; Efficient water-use through Inca and pre-Inca irrigation systems</p>
<p><b>Philippines</b></p> <p>Ifugao Rice Terraces</p>	<p><b><u>Agricultural biodiversity:</u></b> Traditional rice varieties of high quality for rice wine production (4 endemic); Associated mudfish, snails, shrimps, and frogs in paddies, some of which are endemic; Managed forest re-growth (muyong) after shifting cultivation, with enhanced biodiversity (264 species, mostly indigenous, 47 endemic), including 171 tree species (112 species are used), 10 varieties of climbing rattan, 45 medicinal plant species, 20 plant species which are used as ethno-pesticides.</p> <p><b><u>Associated biodiversity:</u></b> 41 bird species, 6 indigenous mammal species and 2 endemic reptiles</p> <p><b><u>Ecosystem functions:</u></b> The muyong have important functions for water regulation in the hydrological cycle (catching 320 cubic meters of water while primary forest catches 74.5 cubic meters), and provide habitat for pollinators and pest predators. The terraces provide reservoirs for excess water, reduce land degradation and erosion and catch nutrients and filter water for human consumption.</p>