**Appendix 1**. Table shows Environmental Quality Incentives Program (EQIP) drought-related conservation practices and their Conservation Practice Physical Effects (CPPE) values. The CPPE is a ranking system that provides a relative value, ranging from negative 5 to positive 5 (highest value), indicating the effect of a particular conservation practice on a resource concern. Positive values indicate positive effects or improvements on the resource concern, whereas negative values indicate adverse effects on the resource, and a value of zero indicates no effect. A ranking of values greater than 2 was determined as an adequate ranking for the Caribbean agricultural landscape. The ‘X’ indicates the resource concern category under which the practice falls based on their CPPE valuation >2.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Practice** | **Water availability** | **Inefficient moisture management** | **Inefficient use of irrigation water** | **Inadequate livestock water** | **Soil health** | **Wind erosion** | **Organic matter depletion** | **Plant health** | **Undesirable plant productivity and health** | **Inadequate feed and forage** |
| 1. Access Control | x | 3 | 0 | 0 |  | 1 | 1 | x | 3 | 3 |
| 1. Alley Cropping | x | 0 | 3 | 0 | x | 5 | 5 | x | 5 | 1 |
| 1. Brush Management |  | 2 | 0 | 0 |  | 1 | 0 | x | 2 | 4 |
| 1. Conservation Crop Rotation |  | 2 | 2 | 0 | x | 4 | 4 | x | 4 | 2 |
| 1. Cover Crop |  | 2 | 1 | 0 | x | 4 | 2 |  | 2 | 2 |
| 1. Critical Area Planting |  | 0 | 0 | 0 | x | 5 | 5 | x | 5 | 0 |
| 1. Fence |  | 0 | 0 | 0 |  | 0 | 0 | x | 2 | 3 |
| 1. Field Border |  | 0 | 0 | 0 | x | 4 | 4 | x | 5 | 0 |
| 1. Filter Strip |  | 0 | 0 | 0 | x | 0 | 5 | x | 5 | 0 |
| 1. Firebreak |  | 0 | 0 | 0 |  | -1 | -2 | x | 3 | 0 |
| 1. Forage and Biomass Planting |  | 0 | 0 | 0 |  | 1 | 1 | x | 1 | 5 |
| 1. Grassed Waterway |  | 0 | 0 | 0 | x | 0 | 3 | x | 5 | 1 |
| 1. Grazing Land Mechanical Treatment |  | 2 | 0 | 0 |  | 1 | 1 | x | 4 | 1 |
| 1. Herbaceous Weed Control |  | 0 | 2 | 0 | x | 4 | 0 | x | 2 | 4 |
| 1. Herbaceous Wind Barriers | x | 3 | 0 | 0 | x | 4 | 2 |  | 2 | 0 |
| 1. Integrated Pest Management (IPM) |  | 0 | 0 | 0 | x | 3 | 2 |  | 0 | 0 |
| 1. Irrigation Reservoir | x | 0 | 2 | 4 |  | 0 | 0 |  | 2 | 0 |
| 1. Irrigation System, Microirrigation |  | 0 | 2 | 0 |  | 0 | 0 | x | 2 | 4 |
| 1. Irrigation Water Management |  | 0 | 2 | 0 |  | 2 | 1 | x | 2 | 4 |
| 1. Livestock Pipeline | x | 0 | 0 | 5 |  | 0 | 0 |  | 2 | 0 |
| 1. Mulching |  | 2 | 2 | 0 | x | 4 | 2 |  | 2 | 0 |
| 1. Multi-Story Cropping |  | 0 | 0 | 0 | x | 1 | 5 | x | 5 | 0 |
| 1. Nutrient Management |  | 0 | 0 | 2 |  | 0 | 2 | x | 2 | 4 |
| 1. Pond | x | 2 | 2 | 5 |  | 0 | 0 |  | 2 | 0 |
| 1. Pond Sealing or Lining, Flexible Membrane | x | 2 | 2 | 4 |  | 0 | 0 |  | 1 | 0 |
| 1. Prescribed Grazing |  | 2 | 0 | 0 | x | 4 | 4 | x | 5 | 5 |
| 1. Pumping Plant | x | 2 | 2 | 5 |  | 0 | 0 |  | 2 | 0 |
| 1. Residue and Tillage Management, No-Till |  | 2 | 2 | 0 | x | 4 | 2 |  | 2 | 0 |
| 1. Residue and Tillage Management, Reduced Till |  | 2 | 1 | 0 | x | 4 | 2 |  | 2 | 0 |
| 1. Residue Management, No-Till/Strip Till |  | 2 | 2 | 0 | x | 4 | 2 |  | 2 | 0 |
| 1. Riparian Forest Buffer |  | 0 | 0 | 0 | x | 2 | 4 | x | 5 | 0 |
| 1. Roof Runoff Structure | x | 3 | 0 | 2 |  | 0 | 0 |  | 0 | 0 |
| 1. Row Arrangement | x | 4 | 4 | 0 |  | 1 | 1 |  | 1 | 0 |
| 1. Silvopasture Establishment |  | 2 | 0 | 0 | x | 3 | 3 | x | 5 | 3 |
| 1. Spring Development | x | 2 | 2 | 5 |  | 0 | 0 |  | 2 | 2 |
| 1. Sprinkler System | x | 0 | 5 | 0 |  | 2 | 0 | x | 2 | 4 |
| 1. Streambank and Shoreline Protection |  | 0 | 0 | 0 |  | 0 | 0 | x | 4 | 1 |
| 1. Tree/Shrub Establishment |  | 1 | 0 | 0 | x | 5 | 4 | x | 5 | 0 |
| 1. Tree/Shrub Pruning |  | 0 | 0 | 0 |  | 0 | 1 | x | 5 | 0 |
| 1. Tree/Shrub Site Preparation |  | 2 | 0 | 0 |  | -1 | -2 | x | 5 | 0 |
| 1. Waste Recycling |  | 2 | 2 | 0 |  | 1 | 2 | x | 2 | 4 |
| 1. Water Well | x | 0 | 2 | 5 |  | 2 | 0 |  | 1 | 2 |
| 1. Watering Facility | x | 0 | 0 | 5 |  | 2 | 0 |  | 2 | 2 |
| 1. Windbreak/Shelterbelt Renovation | x | 3 | 5 | 0 | x | 5 | 4 | x | 5 | 1 |

**Appendix 2. Number of EQIP drought-conservation practices (points) applied between 2000 and 2016, per each 5 km2 hexagon unit**

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**Appendix 3. Supplementary information on the Moran’s I and Getis-Ord Gi\* analyses**

We used Moran’s I Spatial Autocorrelation to determine the optimum distance parameter for the hotspot analysis and to measure the global spatial autocorrelation of Puerto Rico at the island scale. Secondly, we carried out hotspot analyses using Getis-Ord Gi\* local clustering (with the zone of indifference conceptualization model) to evaluate and map the areas with high concentrations (hotspots) or low concentrations (coldspots) of conservation practices. The table below presents the maximum peak distance band, Moran’s Index, z-score, and p-values for each of hotspot analyses conducted. EQIP stands for Environmental Quality Incentives Program.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hotspot Analyses | Distance band (km) | Moran’s Index | z-score | p-value |
| All EQIP related practices (2000 - 2016) | 7.50 | 0.16 | 28.28 | 0.00 |
| Plant health related practices (2000 - 2016) | 5.00 | 0.18 | 21.62 | 0.00 |
| Soil health related practices (2000 - 2016) | 11.00 | 0.13 | 34.46 | 0.00 |
| Water availability related practices (2000 - 2016) | 5.00 | 0.16 | 19.00 | 0.00 |

**Appendix 4**. Agricultural losses (in US dollars) in 2015 due to drought conditions across Puerto Rico. Data derived from the Puerto Rico Department of Agriculture preliminary reports of crop losses; 2017.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Affected products** | **Spanish name** | **Scientific name** | **Value of loss ($)** | **Percent of total losses (%)** |
| Grass | Grama | *Various species* | 4,621,373.00 | 33.418 |
| Fodder | Pasto/Forraje | *Various species* | 3,980,516.40 | 28.784 |
| Plantain | Plátano | *Musa acuminata* | 3,109,425.24 | 22.485 |
| Cattle | *Ganado* | *Various species* | 750,680.00 | 5.428 |
| Culantro | Recao | *Eryngium foetidum* | 441,300.00 | 3.191 |
| Yam | Ñame | *Dioscorea L.* | 330,880.00 | 2.393 |
| Cilantro | Cilantrillo | *Coriandrum sativum* | 120,015.00 | 0.868 |
| Avocado | Aguacate | *Persea americana* | 65,920.50 | 0.477 |
| Yautia | Yautía | *Xanthosoma spp.* | 63,611.62 | 0.460 |
| Pumpkin | Calabaza | *Cucurbita spp.* | 56,669.75 | 0.410 |
| Arracacha | Apio | *Arracacia xanthorrhiza* | 55,524.72 | 0.402 |
| Sweet chili pepper | Ají | *Capsicum chinense* | 54,942.30 | 0.397 |
| Banana | Guineo | *Musa spp.* | 52,291.66 | 0.378 |
| Ginger | Jengibre | *Zingiber officinale* | 36,920.40 | 0.267 |
| Papaya | Papaya | *Carica papaya L.* | 15,156.36 | 0.110 |
| Watermelon | Melon sandía | *Citrullus lanatus* | 14,839.20 | 0.107 |
| Chayote | Chayote | *Sechium edule* | 14,771.25 | 0.107 |
| Cassava | Yuca | *Manihot esculenta Crantz* | 13,767.60 | 0.100 |
| Sweet potato | Batata | *Ipomoea batatas* | 11,048.28 | 0.080 |
| Eggplant | Berenja | *Solanum melongena L.* | 8,887.68 | 0.064 |
| Dasheen | Malanga | *Colocasia esculenta* | 3,660.80 | 0.026 |
| Beans | Habichuelas | *Phaseoulus spp.* | 3,163.44 | 0.023 |
| Cucumber | Pepinillo | *Cucumis sativus L.* | 1,562.85 | 0.011 |
| Coffee | Café | *Coffea spp.* | 1,534.08 | 0.011 |
| Green bean | Habichuelas verdes | *Phaseoulus spp.* | 391.68 | 0.003 |
| **TOTAL** |  |  | **13,828,853.81** | **100.000** |

**Appendix 5.** Drought losses by municipality in 2015. Data derived from the Puerto Rico Department of Agriculture preliminary reports of crop losses; 2017.

