and smaller soil volume respectively. In conclusion, the soil organic carbon accumulation in cactus pear was affected by soil volume.

***Keywords***: Carbon isotopic signature, pot size, Opuntia ficus-indica, mean resident time, roots weight

*7. Type of submission:* ***Poster abstract***

B. Biome Working Group sessions: B9 Ecosystem services provided by terraced landscapes

## Cactus: provision of ecosystem goods, services and function

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The dry areas grow 44% of the world's food and keep half of the world's livestock. Hence, the productivity in these areas can be increased by the cultivation of adapted crops that can thrive in these conditions. Spineless cactus pear (Opuntia ficus-indica) is an ideal candidate that can grow in the driest and most degraded land. Cactus is a multipurpose crop with significant ecological, economic and social potential. However, this crop continue to receive limited scientific, political and media attention. The main objective of this study is to highlight the benefits and ecosystem services generated from cactus pear.. Cactus can play significant roles in the livelihood of small holder farmers. It can be used as fruits for human consumption (8 metric tons of fruit production at 2.000 plant ha-1), as a vegetable crop (80-90 t ha-1 at 40,000 plants ha-1) and as fodder for livestock (25 t ha-1 yr -1). It is the source of wide range of medical products and by- products such as seed oil, cosmetic, industries and processed fruits. Cactus pear can be used for soil and water erosion control, regulation of climate through carbon sequestration and biodiversity conservation. Cacti are also capable of taking up relatively large amounts of CO2 with respect to water loss by transpiration (4 to 10 mmol CO2 per mol H2O, compared to 1 to 1.5 mmol in C3 plants). Consequently, a major shift in the role of cactus pear is necessary, which aims at balancing environmental conservation, farming systems with socio-economic development. Promoting the ecological, economic and social benefits of cacti and strengthening the technical capacity

of human resources will benefit the fodder availability and by-products from cactus production.

***Keywords:*** livelihoods, sustainability, sustenance, degradation, rehabilitation.

*8. Type of submission:* ***Poster abstract***

S. Sectoral Working Group sessions: S8b Plant breeding and native seed preservation: Best practices for maintaining ecosystem services

## Effects of salt stress on physiological responses in pepper genotypes

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Salt stress is one of the most serious abiotic stresses that cause reduction in plant growth, development and yield in many parts of the world. In the study, 10 pepper (Capsicum annuum L.) genotypes have been investigated for their responses against salinity stresses in early plant growth stage. For these purposes, several morphological and physiological measurements and analysis have been done in salt stress and control plants. Seeds of genotypes were germinated in plastic pots its contained mixture of peat:perlite of 2:1 ratio. Plants with four leaves were subject to 150 mM NaCl. The end of the stress, plants were evaluated according to 0-5 symptoms scores, shoot fresh and dry weight, shoot height, steam diameter, leaf number, leaf area, relative water content, leaf membrane injury index, shoot K, Ca, and Na concentrations were measured and analyzed. The shoot fresh and dry weight, shoot height, leaf number and area, relative water content (RWC) were reduced with different level of salt stress. However, these reductions clearly occurred in BİB-4 and BİB-9 (sensitive). Salt tolerant genotypes BİB-6 (2.71%), BİB-8 (2.2%) and BİB-7 (2.39%) limited Na accumulation in shoot and acted selectively among ions. Therefore, K and Ca accumulation was high in shoot in which Na concentration were low and tolerant genotypes had higher K/Na and Ca/Na ratios than sensitive genotypes.

***Keywords***: Capsicum annuum, MIDX, RWC, sodium, salinity