Building Homes for Solitary Bees

By a group of year 11 Agribusiness students at Maria Regina Secondary School Zokrija, Mosta

With over 20,000 bee species found globally, honey bees are by far the most commonly known ones. Having said so, one also finds solitary bees. These are bees which do not to live in groups and do not produce honey. Two such types of bees found locally are the mason bee and the leaf cutter bee. Their names are derived from the nature of material from which their nests are built from (mason bees from small stones whereas the leaf cutter bees from leaves).

Solitary bees are important pollinators. A decline in bees would imply having less pollinated crops and so less seeds would form. If there are less seeds, then there will be less crops growing. Various crops are in fact pollinated by bees and these include the tomato plant, basil, apple tree and the almond tree amongst others. Bees are therefore needed for food security. A decrease in pollination would also result in a lower fruit and seed formation. It is estimated that around 84% of European crops benefit from insect pollination and bees form part of this percentage. According to Gallai *et al.* (2008) bees provide €22 billion in Europe a year to crop pollination.

There are various challenges which the bee population is currently facing and these include the use of agrochemicals, urbanisation, wild fires, temporal mismatches as well as invasive species which are affecting the native species.

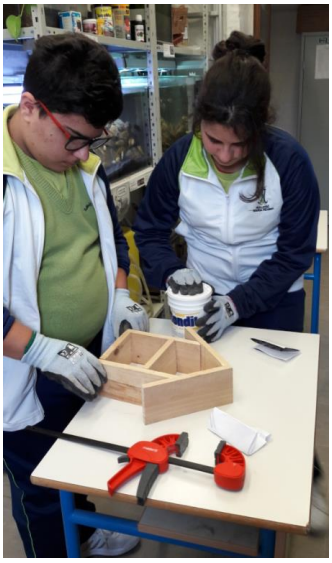
Given the importance of solitary bees on food security, various entities from around the world have embarked on various projects to rear and cultivate such bees for the purpose of pollination on a commercial basis. *Osmia* bees are reared in Europe for orchard pollination whereas *Osmia cornifrons* are reared for the pollination of apples and almonds. Considering the local scenario, the bumble bee (*bomblu* in Maltese) is being imported and released in greenhouses to pollinate flowers such as those of tomato plants.

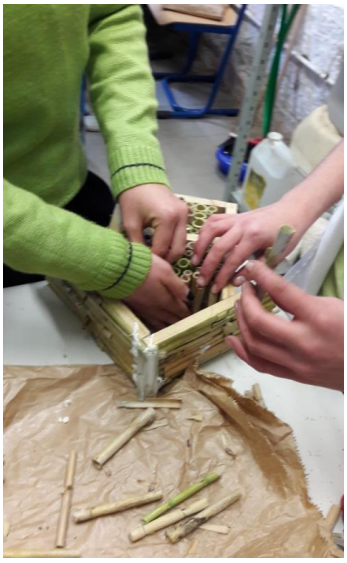
In order to encourage bees to multiply, bee houses were built using wooden pallets. Bamboo shoots and reeds were used of various diameter to promote bees to nest here. Some bee houses had a frame hanger

attached to the back part of the bee house to attach it to the wall whereas others were positioned on stones. Close to the bee houses were flowers and plants which attract bees. Students have also sowed seeds of flowers which attract bees. In this way students hope to promote an attractive environment for bees to visit and procreate.

Various photos of the students work were uploaded onto a social media page dedicated entirely to Agribusiness. The setting up of this page contributed to increasing awareness about the importance of solitary bees and pollination.

Through such a simple project, we can all do our part by helping out solitary bees. Not to mention the fact, that since various shapes of bee houses can be built, we would be contributing in providing a more attractive environment.





Both photos show various students building the bee house

References:

Claudio Sedivy, Silvia Dorn. Towards a sustainable management of bees of the subgenus Osmia (Megachilidae; Osmia) as fruit tree pollinators. Apidologie, Springer Verlag, 2013, 45 (1), pp.88-105

Nicola Gallai, Jean-Michel Salles, Josef Settele, Bernard E. Vaissière. Economic valuation of the vulnerability of world agriculture confronted with pollinator decline. Ecological Economics, Elsevier, 2009, 68 (3), pp.810-821.