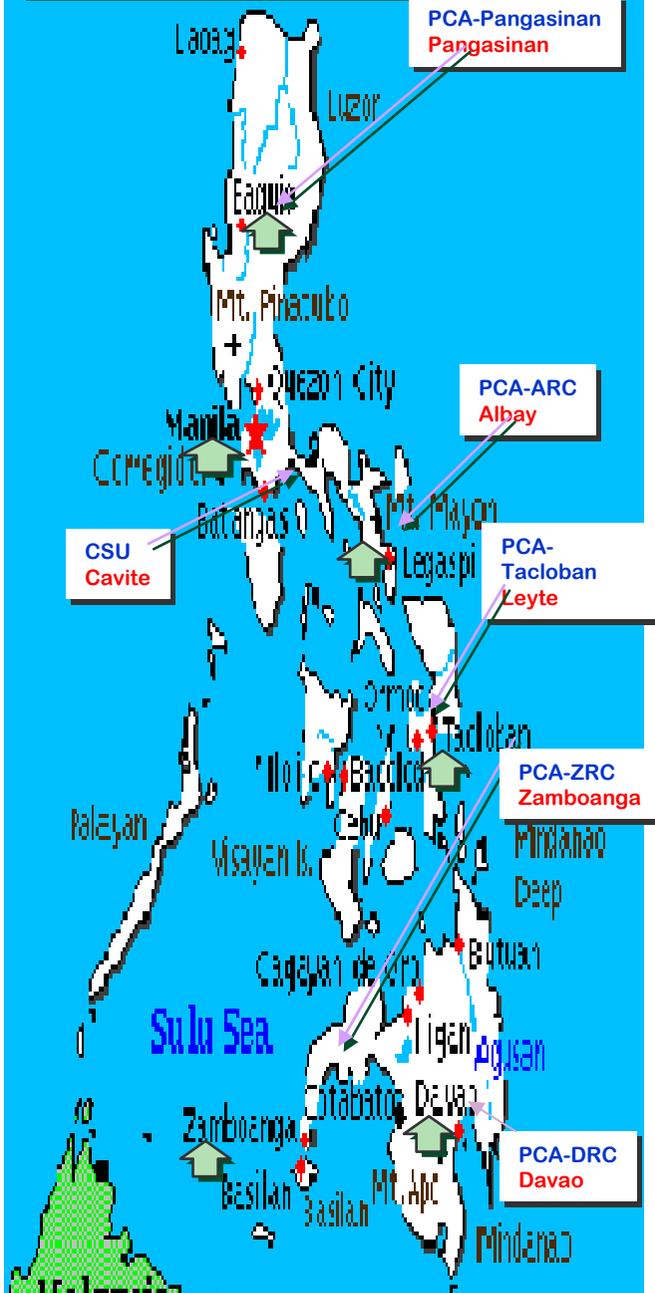


**DOST-Assisted
Makapuno Embryo
Culture Laboratories**



PCA-ZRC's VISION

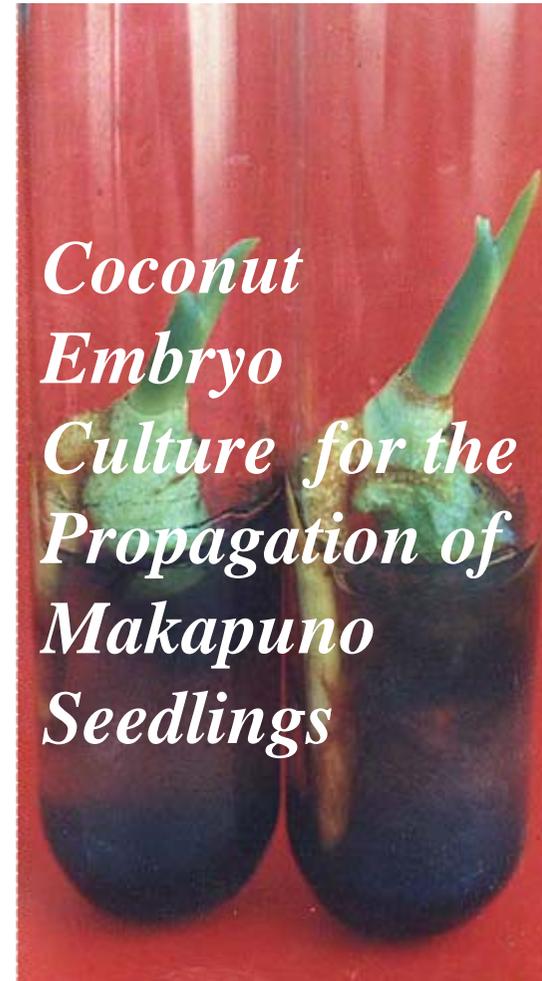
"A Center of excellence for coconut and oil palm research and development in varietal improvement, farming systems, food and non-food (farm waste) processing and utilization"

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PHILIPPINE COCONUT AUTHORITY
Zamboanga Research Center



*Coconut
Embryo
Culture for the
Propagation of
Makapuno
Seedlings*

Department of Science and Technology
Philippine Council for Agriculture, Fisheries and
Natural Resources Research and Development



Makapuno nuts have a soft solid endosperm and jelly-like liquid endosperm



Extracted embryos are inoculated into Y3 culture medium



Growing seedlings are sub-cultured every 4 weeks



Seedlings with at least 3-4 leaves and well developed roots are ready for transfer to greenhouse conditions

The coconut embryo culture technology is now being successfully applied in the rescue of Makapuno embryos. The Makapuno embryo does not develop normally because the endosperm, which supports the germination of the embryo, is abnormal and rots when the nut matures. The embryo culture technique is the only means known to germinate the Makapuno embryos to produce pure bearing Makapuno palms.

Successfully grown Makapuno palms could produce 100% Makapuno nuts, if planted together and properly isolated from other coconut palms using pollen barrier. In contrast, palms grown from normal nuts of a Makapuno-bearing palm can produce only up to 25% Makapuno nuts because they are heterozygous for the Makapuno character.

With financial assistance from DOST-PCARRD, several embryo culture satellite laboratories have been established to mass produce Makapuno seedlings for interested coconut growers. These are located in Albay, Pangasinan and Cavite (for Luzon); Leyte (for the Visayas); and Davao, and Zamboanga (for Mindanao).



Seedlings are gradually subjected to natural light, humidity and temperature



Developing seedlings are transplanted to garden soil and kept in partial shade



Seedlings are exposed to full sunlight prior to field planting