

By Wan Shahara Ahmad Ghazali

KUALA LUMPUR (Bernama) -- Afforestation is a term that is often used in the greening efforts in many countries today, but the public sometimes confuse the term with reforestation.

Afforestation is the establishment of a forest in an area where there was no forest or one that was left barren for a long time, such as an ex-mining land, weedy land or savannah.

Reforestation, meanwhile, is the reestablishment of a forest in an area that was once a forest in the last 50 years. Examples of these would be a logging areas or a former plantations.

However, both processes called for the manual redevelopment of forests by direct seeding or in cases where there was a need to expedite the process, the planting of saplings, said Dr Ahmad Zuhaidi Yahya, the Forest Plantation Programme Head at the Forest Research Institute of Malaysia (FRIM).

"The process that involves human intervention is a little different from natural afforestation. It may take several years before dormant seeds start germinating (in natural afforestation)", he explained.

However, it would take the newly grown forest hundreds of years to form a mature ecosystem with woody trees, shrubs, vines and herbs, naturally.

LANDMARK OF SUCCESS

FRIM has long been associated with its success in regreening lands into forests again. One of its major success was with the 544-hectare mixed forest on its own campus at the Bukit Lagong Forest Reserve in Kepong.

The site of the campus was formerly an ex-tin mine, abandoned land and vegetable farm. Today, it is a beautifully landscaped recreational forest that hardly differs in appearance from a natural forest.

The earliest afforestation effort at the site started in 1927 using various high quality species of timber from the dipterocarp and non-dipterocarp types. Also planted were several high potential exotic species such as mahogany (*Swietenia macrophylla*) and pine (*Araucaria cunninghamii* and *A. hunsteinii*).

"The success in manual afforestation of the FRIM campus is the country's benchmark in forest conservation. In fact, it has been documented as the world's oldest man-made tropical forest", Ahmad Zuhaidi told BERNAMA.

The government-affiliated body is constant in its forestation efforts. Today, it is actively working

on establishing new forests through silviculture, the practice of active management of forest plantations.

FRIM offers its service in afforestation to any entities looking to bring neglected lands back to life.

POOR SECONDARY FORESTS

One of FRIM's forestation efforts is a joint project with the Landscape Department of Universiti Teknologi Malaysia (UTM) on a 150-hectare piece of land in its Skudai campus in Johor.

The area is an old and neglected rubber plantation and a poor depleted secondary forest, located inside the campus.

The project, started in 2012, is expected to be carried out over five years. It will be continually cared for until 2017.

Ahmad Zuhaidi said the low-impact forestation project was beneficial to local ecosystem as it would further enrich the ecosystem.

The UTM campus land was a gentle slope with good irrigation, with colluvial soil at the base, along the entire stretch of a river.

To convert the poor secondary forest into a new, rich forest, the joint effort involved the replanting of the saplings of selected commercial forest tree species. These include timber species such as dipterocarps and non-dipterocarps, bamboos and herbs, planted among the existing rubber trees.

"Among the trees that we found were suitable for the soil were from the various species of meranti, keruing, cengal and engkabang, which are normally found near rivers", he said.

The non-dipterocarp species include jelutong, merbau, nyatoh, kelempayan, sesenduk, karas and perah.

Also planted were various types of riparian and medicinal herbs, 20 species of bamboos and nibong.

IMPROVING BIODIVERSITY

Ahmad Zuhaidi said the main objective of the mission was to increase the biological diversity of the area by planting commercial forest tree species on the land and subsequently turning it into an educational and recreational forest.

Around 500 saplings were planted.

The existing rubber trees and other secondary trees that are unwanted will be slowly killed off

using a technique called "girdling". This is a process of starving a tree off nutrients by completely removing a strip of bark containing the "cambium" around the tree trunk.

"The normal function of the cambium layer, which is to circulate nutrients, would then cease. This would cause the leaves, branches and then tree to slowly die, subsequently allowing light to reach the forest floor", he explained.

SIGNS OF DEVELOPMENT

The change following forestation may not be immediate, so follow-ups that include further research and treatment are important.

Ahmad Zuhaidi said it might take years before results became evident.

For now, his team believed that the saplings planted were doing well. This was based on their initial study of the saplings, which showed the plants were now between 1.5m to two metres in height, a promising growth rate.

Ahmad Zuhaidi said the facilities at UTM, its location and landscape also improved the potential of success for the five-year programme.

"With a systematic treatment schedule of the plants, the new forest's potential in becoming a rich mixed tropical forest can be very high", he said.

He said scheduled monitoring would enable the plants to reach the thicket stage, where the average height of trees were four to five metres high, by the end of the programme.

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