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Learn from history to avoid crises

Address serious shortage of taxonomists

# Address serious shortage of taxonomists

GHAZALLY ISMAIL

THE 1990s was the decade for biodiversity. The 1992 Earth Summit highlighted the plight of global biodiversity.

There was disturbing evidence on species extinction. The worst hit would be fragile tropical rainforests and coral reefs. Malaysia was one of the 140 signatories to the United Nations Convention on Biological Diversity pledging to take action.

Since the summit, Malaysia has been exemplary in creating protected areas for biodiversity. The pace has been impressive. Five million hectares of forested land has been designated protected areas. With 23 national and state parks encompassing 850,000ha and 15.3 per cent of its land area designated as totally protected forests, Malaysia has emerged as a major player in conservation and tropical biodiversity.

Despite this impressive growth, our advancement in biodiversity inventory has not been equally spectacular. Inventorising biological resources and monitoring the status of biodiversity is crucial. While it is important to conserve biodiversity, it is also crucial to know the species components.

The summit was not just about conservation. It emphasised equally the need for humankind to benefit from biodiversity. One potential benefit was biodiversity prospecting: the search for potential pharmaceutical, agricultural and industrial uses of biological resources. For many developing countries, the promise of huge economic benefits from biodiversity prospecting was a powerful incentive to promote conservation. Indeed, the principle of equitable sharing of benefits through sustainable use of biodiversity was seen as a prized perk of the Convention on Biological Diversity. Biodiversity-rich countries like Malaysia stood to accrue huge socio-economic benefits through technology transfer from technology-rich nations. But all this would come to nought if we don't even know what we have.

Making an inventory of what constitutes Malaysian biodiversity is an imperative. But it is no easy task. In developed nations, national history institutions such as museums, herbaria and arboretums do it. Sadly, the plan to establish our own natural history museum remains an elusive dream.

The problem is far more serious than a lack of funds. The Conference of the Parties to the Convention on Biodiversity has identified a greater obstacle called the "taxonomic impediment": a shortage of taxonomists to inventory and characterise the world's biodiversity. Malaysia is one of the many nations experiencing this worldwide taxonomic hold-up.

Who are taxonomists? They are professionals trained to identify and describe species known or new to science, determine their taxonomic relationships and predict their properties and functions in the environment. Most taxonomists in Malaysia come from agencies such as Forest Research Institute of Malaysia, Malaysian Agricultural Research and Development Institute, the Wildlife and National Parks Department, museums and universities. Unfortunately, taxonomists are becoming rare. The shortage is expected to worsen due to age and retirement. There has also been a sharp drop in the number of jobs in taxonomy.

Almost every expert in the field has cited the loss of many graduates who had failed to secure research grants or permanent jobs to pursue their taxonomic studies. Consequently, every major museum or herbarium in Malaysia suffers from a huge backlog of unidentified biological specimens and undescribed new animal and plant species. In some museums in Sabah and Sarawak, these specimens have accumulated on the shelves of poorly funded laboratories and storage rooms since colonial days.

So, what is the cause of this impediment? Taxonomy is often dismissed with "Who needs taxonomists"? Very few understand the crucial task of taxonomists. Few realise they are our first line of defence against crop and farming diseases caused by exotic species.

They are there to determine the ecologic relationships among species, providing scientific insights on how to monitor and manage our habitats and environments. Chemists and geneticists working to unlock the novel compounds and gene functions often seek the help of taxonomists for correct identification of organisms.

Inextricably linked to other scientific disciplines, taxonomists delve into an area needed to reveal new information, hand in hand with ongoing explorations of the natural world.

The lack of taxonomic expertise could impede progress in other biodiversity research. Nation-wide participation from all agencies and institutions that maintain biological collections is required to provide a solution to this problem. Through existing resources, our taxonomists could work towards the establishment of a common network supported and funded by the government.

Through this network, taxonomists can be called to perform research and services in support of biodiversity inventory. Besides serving as a clearing house, the network could help set priorities by focusing attention on needed taxonomic work in the country. It could arrange taxonomic training. As a start, this network could be Internet-based.

Dialogues between those involved in taxonomic work, policymakers and users of biodiversity must take place. In the long term, the network would demonstrate the value of taxonomic research and resources to all.

It would develop a new outlook on the network's own value and potential; providing an impetus for a paradigm shift to one that values basic research. Only then will taxonomy be seen as a valued commodity. If, by then, we are still not moved to develop our own museum of natural history, nothing else will.

■ **Dr Ghazally Ismail is a fellow of the Academy of Sciences Malaysia**

Taxonomists form an important link in the chain of scientific discovery.