

## THE PACIFIC ISLANDS: A NATURAL TREASURHOUSE OF BIORESOURCES AND ISLAND BIOTECHNOLOGY

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### Summary

Traditional medicines, the mainstay of medical treatment for virtually all minor ailments in many developing countries, have been tapped for the production of new therapeutics in the sustenance of human health and well-being (see also – *Bio-Cultural Diversity and Medicine*). Vulnerable to the vicissitudes of globalization issues such as intellectual property rights, trade and gender are of relevance in the Pacific region that is a source of some unique traditional healing systems.

### 1. Introduction

The calming remedy and the therapeutic serenity in a world of socio-cultural development in the Pacific region, and more particularly the South Pacific region, has been captured in the Pulitzer Prize-winning novel *Tales of the South Pacific* by James Michener, and in the cinematic musical *South Pacific* by Richard Rodgers and Oscar Hammerstein Jr. This region of geographical and political significance, whose strategic location has been described as the *Pacific Rim* or the *Pacific Arc*, is spread wide across some 165.384 million km<sup>2</sup> of the Pacific Ocean that is home to about 30,000 islands.

These in turn constitute some 22 countries and territories with a land surface of 550,000 km<sup>2</sup> contained in either single island states or in groups of large and small dispersed islands, and which are inhabited by a total population of some 8.5 million inhabitants.

The Pacific region, with its exclusive economic zone of 15 million km<sup>2</sup>, possesses a unique and unrivalled combination of geographically located bioresources of cultural and socioeconomic significance that today is being threatened by the novel all-encompassing waves of globalization (see also– *Inventions, Patents and Morality*). The world of medicinal plants is part and parcel of these threatened and vulnerable indigenous resources in the small island states and territories of the Pacific region.

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### Bibliography

[The Pacific region is a natural treasury of a wealth of bioresources and island biotechnology. numerous cultures such as those of the Aborigines and the Maoris constitute a resource base of alternative and traditional plant-based medicines--see 11(a) and 11(b) below].

**11a Articles from Books and Journals** [Aspects of traditional medicines, the mainstay of medical treatment for virtually all minor ailments in many developing countries, have been tapped for the production of new therapeutics in the sustenance of human health and well-being of the peoples of the small Pacific islands. Vulnerable to the vicissitudes of natural disasters and climate change these islands are also confronted by contemporary globalization issues such as intellectual property rights, trade and gender are of relevance in the Pacific region - list of books and journals cited in 11a and webpages 11b]

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### Biographical Sketches

**Edgar DaSilva**, a graduate of the University of Bombay in microbiology and chemistry, was awarded, in 1962, the Bachelor of Science Degree (First Class with Honours). In 1966, he obtained the Master of Science Degree, and in 1969 his Doctoral Degree for research studies on the cyanobacteria. As a NORAD Fellow, his research study, on the marine algae at the Norwegian Seaweed Research Institute, Trondheim, Norway, in 1970, was followed by a teaching assignment at the University of Helsinki, Helsinki, Finland. Two years later, he joined the Institute of Physiology, University of Uppsala, Uppsala, Sweden as a UNESCO fellow. He is a former Vice-President of the World Federation for Culture Collections (WFCC), author of several scientific publications, and member of well-known microbiological societies. Moreover, he has also been a keynote plenary speaker at several international events in, Argentina, China, Kuwait, Nigeria, South Africa, Sweden, Thailand, USA, etc. on biopolicy issues in regional co-operation, microbiological education, and on globalization and sustainable development.

At UNESCO since 1974 in various capacities within the Division of Scientific Research and Higher Education and the Division of the Basic Science Dr. DaSilva has been instrumental in the planning and

implementation of several UNESCO regional and international programmes in applied microbiology as well as in the development of the global networks dealing with management and use of microbial resources and training opportunities in the fields of marine and plant biotechnology. Moreover he mobilized several extrabudgetary programmes in close cooperation with UNEP and UNDP and Donor Member States for activities in national development in biotechnology and regional cooperation in microbiology.

He also was the Director, Division of Life Sciences that was subsequently transformed into a Section of the Life Sciences within a new Division of the Basic and Engineering Sciences prior to his retirement from UNESCO.

Currently Dr. DaSilva has had teaching assignments as Visiting Professor at the International Centre for Biotechnology (ICBiotech) in Osaka University and its outreach station, and teaching assignments at the UFS, and at the Outreach station of ICBiotech at Mahidol University, Thailand and at the University of the Free State, Republic of South Africa.

A fellow of the World Academy of Art and Science and following a keynote lecture to the Biotechnology Division of the Royal Swedish Academy of Engineering Sciences and the Biofocus Foundation, Dr. DaSilva was awarded the Biopolicy Award in 2003.

**Dr. Murukesan Krishnapalli** currently holds the position of Agricultural researcher with the College of Micronesia USDA Land Grant Programs at Yap Island Campus. He possesses a Ph.D. in Plant Science and PG Diploma in Environmental Education and Management besides an International Certificate in ISO 14001 Environmental Management System internal auditing. He worked for environment related projects in New Zealand, Sweden and Seychelles and with the Gujarat Ecology Commission in the World Bank funded Biodiversity Project. Current research interests are on agrobiodiversity conservation, simplified home hydroponics gardens, enhanced production of giant swamp taro through the elimination of burrowing nematodes and groundwater quality studies in Yap islands.