

THE UNIVERSITY OF THE SOUTH PACIFIC
GUIDELINES FOR BIODIVERSITY RESEARCH
AND
BIOPROSPECTING

A. BIODIVERSITY RESEARCH

The rich biodiversity¹ of the tropical South Pacific region encompassed by the University of the South Pacific member countries² represents the heritage of its people at both the national and community levels, and its sustainable use holds the key to their future well-being and security. Much of this biodiversity remains undiscovered and undescribed, and its value, both real and potential, is largely unknown. The University of the South Pacific recognizes that priority must be given to assist its member governments in the conduct of both basic and applied research on biodiversity, and seeks to collaborate with governments and communities of the region, and with other research and development institutions world-wide, to ensure that scientific research on biodiversity is conducted in manner that safeguards the flora, fauna, microorganisms, and ecosystems, both terrestrial and marine, and that any benefits of such research are shared equitably with the local communities and governments. This responsibility applies especially to endemic, rare or endangered species, and species of particular economic or cultural importance, and extends to the safeguarding of individual property rights of local communities. Research activities in biodiversity, and in which the University may engage include:

- collection, surveying and cataloguing of biodiversity, including the description of new species using standard taxonomic practices;
- the creation and maintenance of reference collections of biodiversity, for the benefit of all, including museum and herbarium collections, and living collections (e.g. botanical gardens, arboreta, aquaria, culture collections; germplasm collections);
- the dissemination of information on biodiversity through publications, newsletters and other media;
- assessment of biodiversity in relation to the establishment of conservation areas, preserves, and parks;

¹ See Annex I for a definition of Biodiversity.

² Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Vanuatu, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Western Samoa.

- development of a regional biodiversity data base, and creation and publication of lists of endemic, rare and endangered species;
- recording and publishing of indigenous knowledge of biodiversity (ethnobiological knowledge), and recording and publication of lists of names of living organisms in the vernacular languages of the region;
- recording of traditional uses of biodiversity (medicinal and other);
- assistance to governments, communities, national and regional organizations in the development of guidelines and regulations relating to basic biodiversity research, biodiversity conservation and the preservation of local ethnobiological knowledge;
- training of regional nationals in the formal conduct of biodiversity research, according to internationally accepted standards;
- enhancement of public awareness of the importance of biodiversity and traditional ethnobiological knowledge and their preservation as a foundation for sustainable development, through the dissemination of research results in a manner understandable to the general public.

Guidelines for biodiversity research:

Preamble:

Biodiversity research is considered basic research which is a fundamental and required component of research and teaching at the University of the South Pacific. It is not the intent of these guidelines to impede the conduct of such basic work, nor is it considered necessary to require approval of each and every University activity involving biodiversity. *Where biodiversity research leads to bioprospecting, however, it must automatically fall under the guidelines for bioprospecting provided in Section B, and proposals must follow the format provided in Annex 2.*

The University nonetheless considers it desirable on behalf of its member countries to maintain a data base on biodiversity research carried out under its auspices; it will, therefore, carry out regular surveys of biodiversity research and will monitor biodiversity research and related activities with the intent of ensuring that it is carried out according to these guidelines.

Where collaborative biodiversity research is to be carried with non-University individuals, groups or institutions, the University will request that a statement be provided, indicating that the work will be carried out in accordance with these guidelines and that, should the work lead to bioprospecting, the guidelines on bioprospecting provided under Section B will be followed.

Guidelines:

1. Biodiversity research carried out by USP staff, or in collaboration with non-university personnel as part of local, national, regional or international projects, should be carried out in a manner consistent with accepted practices in the disciplines of taxonomy, systematics, ecology, biogeography and related fields.
2. Biodiversity research carried out under the auspices of the University must respect the provisions of the United Nations Convention on Biological Diversity and subsequent agreements of the conference of the Parties to this Convention, as well as regional accords such as the Manila Declaration (1992) and the Melaka Accord (1994); such research must also protect the intellectual property rights of stakeholders, and must respect accepted cultural norms of local communities.
3. Researchers conducting biodiversity research using university funds will be required to sign a statement indicating that the research will be carried out according to the requirements of these guidelines.
4. Researchers conducting biodiversity research under the auspices of the University will be required to adhere to and when requested provide evidence for the following:

- ⇒ Acquisition of research permits from the appropriate government agency; where required, the University will assist non-University individuals or groups in the obtaining of such research permits;
- ⇒ Obtaining informed consent (permission) of resource owners for access to collecting areas, and whenever possible the involvement of local people in the research (e.g. as guides, assistants, informants, hosts) and providing them suitable remuneration for such services;
- ⇒ Demonstrating to local resource owners methods for the proper collection, maintenance and/or preservation of specimens for biodiversity research;
- ⇒ The placement of type and voucher specimens in recognized regional collections and, where specimens are collected by non-regional groups, the deposit of voucher specimens (duplicates) in national or regional collections;
- ⇒ Publication of the results of biodiversity research, which shall at all times be in the public domain;
- ⇒ Interpretation in lay terms or translation into local languages the results of biodiversity research for the use of local resource owners;
- ⇒ Restriction of collections to sufficient specimens required for the research, with minimum disturbance of natural habitats, and with special reference to rare, endangered or locally restricted species;
- ⇒ Prohibition of the sale or export of specimens without the consent of local resource owners, who shall be compensated, and without obtaining necessary export permits where required; any such exports of living materials will follow the guidelines of CITES and other international agreements on the international movement or transfer of living organisms, or products from such organisms;

- ⇒ Provision of advice to resource owners and governments on the value, conservation and sustainable use of their biodiversity based on the results of research.
5. When biodiversity research is conducted in a manner contrary to the above requirements, it will be suspended and subjected to an independent peer review by the Senate Sub-Committee on Biodiversity Research, on the recommendation of the Vice Chancellor. The recommendations of the sub-committee will be forwarded to the Vice Chancellor for action.
6. The University of the South Pacific will be developed, as funds and resources permit, as a repository of specimens resulting from biodiversity research. Existing and planned repositories will include:
- ⇒ The South Pacific Regional Herbarium (to include the collections of marine macro-algae currently held by the Marine Studies Programme);
 - ⇒ The Marine Studies Programme Marine Collections of fin-fishes, corals and other invertebrates, to be housed in the MSP Facilities in Suva;
 - ⇒ A botanical garden to be further developed to include representatives of South Pacific flora; this botanical garden should include a section specializing in medicinal and other traditionally useful plants of the South Pacific region; wherever possible the University will advise regional governments and communities in the establishment of such facilities in USP member countries;
 - ⇒ A germplasm bank, to be established at the University focusing on indigenous crop plants of the South Pacific region; IRETA should be the focus of this collection;
 - ⇒ A culture collection of micro-algae and micro-organisms to be established;
7. The University Library will be responsible for acquiring and maintaining copies of all published and unpublished reports arising from University associated biodiversity research; with the authority of regional member countries, the University will be the legal repository for all non-confidential reports and publications arising out of biodiversity research in the region; and the University will be responsible for lodging copies of all relevant documents in the host USP member countries where such research was carried out.
8. The University of the South Pacific will assist member governments in the training of regional personnel in the practice of biodiversity research, the development and maintenance of repositories of national and regional biodiversity, and the application of applied biodiversity research to sustainable development, through workshops, the development of appropriate undergraduate and postgraduate courses, training programmes, and attachments.

9. The University will encourage formal and informal links with premier biodiversity research institutions (such as the current link with the Smithsonian Institution) in order to enhance capabilities in biodiversity research.

B. BIOPROSPECTING

The University recognizes the very considerable difference between basic scientific research in biodiversity, as described above, and bioprospecting for commercial ends. It also realizes that the dividing line between them is not always clearly demarcated. Indeed, basic research may lead to findings that have commercial potential. Any research on biodiversity where the intent is to collect, sample or survey living organisms with a view to screen or prospect for potentially useful substances or genetic resources falls within the area of bioprospecting³. Unlike basic biodiversity research, bioprospecting by its nature has commercial implications. Bioprospecting includes the following activities:

- collection of organisms (flora, fauna, microorganisms) for the purpose of screening for potentially useful substances;
- the isolation, identification and characterization of potentially useful compounds discovered during the screening process;
- further collection of source organisms in quantity in preparation of laboratory testing and trials;
- laboratory testing and later the conduct of trials of potentially useful compounds;
- patenting of useful compounds;
- research on ways and means to mass-produce useful compounds for commercial purposes; this would include:
 1. sourcing and collection of bulk quantities of the source organisms from the field;
 2. development of culture techniques (for microorganisms) leading to mass culture;
 3. development of biotechnological or chemical methods to mass produce the same or a comparable synthetic compound;
 4. conduct of trials and application for approval of the compound for commercial sale and use from the appropriate authorities;
 5. development of the compound as a commercial product;
 6. marketing and sales.
- isolation, selective breeding and/or hybridization of indigenous food, medicinal or other potentially valuable species for commercial purposes;
- research on biological control using indigenous or exotic species;
- aquaculture, mariculture, sea-ranching and enhancement projects which have the potential of releasing exotic or genetically altered organisms into natural populations, or which involve transportation of exotic, genetically altered or non-indigenous species from one region to another;

³See Annex 1 for a definition of Bioprospecting.

- harvesting and marketing fauna and flora for commercial gain, including the Biological Supply industry (usually for educational purposes); the aquarium fish trade; the export of native birds or butterflies; the live coral trade; etc.
- development of education and training programmes in bioprospecting.

Guidelines for Bioprospecting:

Preamble:

All bioprospecting projects to be conducted by the University of the South Pacific, or by the University of the South Pacific in collaboration with non-university individuals or institutions, must first be submitted to and approved by the University in the format provided in Annex 2. Approval will normally be granted by the Vice Chancellor on the advice of the Senate Sub-Committee on Biodiversity Research, who will, as required, seek independent advice where the expertise to evaluate a particular proposal does not exist on campus.

The University will seek at all times to ensure that bioprospecting activities are in the best interests of its member countries.

Guidelines:

1. All bioprospecting projects must follow the following requirements:

- ⇒ Acquisition and maintenance of research permits, licenses and other approvals from the appropriate government agencies;
- ⇒ Where a bioprospecting project is conducted with University funds, the researcher will be required to sign a statement that the work will be carried out in accordance with these guidelines on bioprospecting;
- ⇒ Where other agencies or individuals are involved a letter of intent should be first submitted by the proposer to the Chairperson of the Senate Sub-Committee on Biodiversity Research. After appropriate negotiations a Memorandum of Agreement should be drawn up, to be signed by the Heads of the cooperating agencies. MOAs should include these guidelines as an attachment;
- ⇒ MOAs should also include articles on patent rights, resolution of disputes, choice of law and terms of agreement, and grounds for termination;
- ⇒ Obtaining the written informed consent (permission) of recognized representatives of resource owners for access to collecting areas;
- ⇒ Notice of the negotiation of any bioprospecting agreement should be made in the sampling area and information given about how to submit comments and questions. These should be addressed through open meetings in local communities;

- ⇒ Protection of the intellectual property rights of the resource owners; this must include a clear statement, to be signed by all parties, on how any benefits accrued from the bioprospecting will be shared between the resource owners, the researchers and the cooperating agencies;
 - ⇒ Involving the participation and/or training of local resource owners in the proper collection and conservation of species of potential commercial value;
 - ⇒ Ensuring that any collection of source organisms is conducted in a manner that is not detrimental to the environment or the functioning of the local ecosystems, and that does not result in the extinction of local populations; this must include a stated size limit of samples, on a species basis;
 - ⇒ In cases where large-scale re-collecting of a single species might result in local endangerment, the researcher will be required to deposit funds with the university to enable appropriate monitoring of recruitment and regeneration, to assess sustainability of the harvesting operation;
 - ⇒ Reaching agreement on the confidentiality of the results of screening and later trials and development work relating to potentially useful compounds, including a clear time-frame for such confidentiality;
 - ⇒ Prohibition of bioprospecting using rare, endangered or restricted species;
 - ⇒ Conducting screening and development of useful compounds as far as possible within the region, and ensuring that whenever possible regional nationals are trained in such work;
 - ⇒ Prohibition of aquaculture, mariculture and enhancement projects that could result in the release or potential escape of exotic or genetically altered organisms into the natural environment;
 - ⇒ Deposit of voucher specimens of all collections, so that their correct identity can be recorded;
 - ⇒ Publication of the results of successful bioprospecting projects, on conclusion of the agreed time limit of confidentiality. This would include the submission of copies to USP and to relevant pre-determined agencies with countries in which bioprospecting has been carried out;
 - ⇒ Interpretation in lay terms, and when appropriate translation into local vernacular languages, of the results of bioprospecting to local resource owners.
2. Where projects involve collaboration with outside agencies, a formal Memorandum of Agreement must be drawn up to include the requirements of paragraph 2 (above), and signed by the Heads of the cooperating agencies before any activities commence.
 3. Except as specified in paragraph 4 (below) MOAs may not include clauses in which exclusive rights are given to any individual or agency, since it is not within the right of the University to negotiate such exclusive rights to biodiversity on behalf of itself or its members.
 4. Exclusive rights may be negotiated, where these refer to specific sites or samples controlled by clearly identified resource owners, and where there is a prior agreement

- on the sharing of any benefits accruing from the bioprospecting in question. There should be a time limit of two years on this exclusivity;
5. Where a bioprospecting project contravenes these guidelines, it will be suspended and subjected to an independent peer review by the Senate Sub-Committee on Biodiversity Research (SSBR), on the recommendation of the Vice Chancellor. The recommendations of the sub-committee will be forwarded to the Vice Chancellor for action.
 6. In the event that a contravention of these guidelines has legal implications, the SSBR may consult with the Registrar or outside legal counsel for advice.
 7. University staff and collaborators engaged in bioprospecting activities will be required to prepare regular progress reports for submission to the Vice Chancellor, through the SSBR and their Head of School.
 8. The University will develop research, education and training programmes in bioprospecting, and will do everything possible to enhance regional expertise in this area. Support of groups such as the Marine Natural Products group centered in the Department of Chemistry and the Marine Studies Programme will be encouraged.
 9. The University will enter into agreements with collaborators and stakeholders in all matters pertaining to patenting, copyright and the sharing of benefits and royalties that may result from bioprospecting.
 10. The University Library will be responsible for acquiring and maintaining copies of all published and unpublished reports arising out of University associated bioprospecting activities; with the authority of regional member countries, the University will be made a legal repository for all non-confidential reports and publications arising out of biodiversity research in the region; and the University will be responsible for lodging copies of all relevant documents in the host USP member countries where such bioprospecting work was carried out.

ANNEX 1

Definition of Biodiversity

Biodiversity is defined as and pertains to the following:

1. **Ecosystem Diversity:** All natural and modified terrestrial, freshwater and marine ecosystems (e.g., coastal strand vegetation, mangroves, gardens, agroforests, lakes, rivers, reefs, lagoons, beaches, sand dunes, aquacultural areas, and the open ocean, etc.).
2. **Species Diversity:** All plants, animals and micro-organisms found in these ecosystems (e.g. all species of trees, shrubs, vines, herbs, grasses, algae, fungi, bacteria, viruses, plankton and invertebrate and vertebrate animals).
3. **Genetic Diversity:** All varieties or genetic forms of these species (e.g. all varieties of domesticated plants (including hybrids and cultivars) and animals, such as coconuts, taro, kava, pandanus, breadfruit, pigs and chickens, and the genetic diversity of wild terrestrial and marine plants and animals at the subspecies level).

Definition of Bioprospecting

Bioprospecting may be defined as any research on biodiversity where the intent is to collect, sample or survey living organisms with a view to screen or prospect for potentially useful substances; to cultivate, harvest or sell living organisms for commercial purposes; or to transplant exotic or genetically altered organisms from one region to another.

ANNEX 2

Format for proposals on Bioprospecting

Proposals for the conduct of work in bioprospecting are to be submitted to the Vice Chancellor for approval, on the advice of the Senate Sub-Committee on Biodiversity Research (SSBR). The proposals must follow the guidelines on bioprospecting as stated in this document, and should be written according to the following format:

1. The title of the project, and the names of all individuals and institutions involved.
2. Where the work involves non-university individuals or institutions, draft MOAs must be provided, which incorporate the guidelines in this document.
3. A statement of the budget and sources of funding, including any "in kind" or actual support provided either by the university or by cooperating agencies.
4. A clear statement of the Aims and Objectives of the project.
5. A clear statement of the time-frame, the location and the methodology.
6. A statement of the kinds of information being extracted and generated.
7. A statement of the format that the information will take (e.g. notes, specimens, extracts from specimens, photographs, computer entries, interviews, etc.)
8. A statement on the anticipated disposition of the information gained, including where specimens and/or samples will be deposited.
9. A statement on how the information obtained will be used (national inventory, museum collection, drug exploration, screening for potentially useful compounds, etc.)
10. A statement on how the local participants or stakeholders will participate in the project (e.g. as guides, hosts, informants, consultants, go-betweens, etc.) and how they will benefit (e.g. wages, training, per diems, etc.).
11. Where there will be clear commercial potential, an agreement delineating short-medium- and long-term benefits to the stakeholders must be drafted, for eventual signing by all parties prior to the start of collections and research.
12. A clear statement on how the published and unpublished findings of the study will be communicated or provided to governments, communities and collaborators (e.g. will reports be submitted to local communities in the vernacular, will locals be co-authors, will there be confidentiality and if so on what terms, etc.).
13. Where the work may involve research leading to a post-graduate degree at the University, a statement on what, if any, confidentiality of the results may apply.
14. A statement on how agreement will be reached on patenting, copyright and the sharing of royalties and income derived from bioprospecting.