

# Faculty of Islands and Oceans

## Concept Paper for a new PG Programme in

### Environmental Management and Sustainable Development

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#### 1. Introduction

Traditionally, Pacific island people have lived a subsistence lifestyle with taboos and practices that ensured sustainability of resource use. However, modernization with all its implications has reduced the quality of life with problems affecting the very pillars of sustainable development (SD).

In an ever-globalising world the situation of Pacific small island developing states (SIDS) continues to be one of exposure and growing vulnerability with an increasing inability to respond. There are many disadvantages that derive from small size, a narrow range of resources, excessive dependence on international trade, high population density, overuse of natural resources, relatively small watersheds, costly infrastructure, fragile ecosystems and high levels of endemism.

#### 2. Background

##### *a. PICS and SD*

The region and the individual Pacific Island Countries (PICs) have made a strong commitment to international efforts to prevent further irreversible environmental change and to promote sustainable development by becoming party to numerous multi-lateral environmental agreements (MEAs) such as the Rio conventions, Barbados Program of Action (BPOA), Johannesburg Plan of Implementation (JPOI) and the Mauritius Strategy (MS) - all of which emphasise the need for development to be more sustainable, particularly in island nations with limited natural resources and skill base.

The three pillars of sustainable development are now recognised to be *economic growth, social development and environmental protection*.

Underlying the economic dimension is the principle that society's welfare needs to be maximized and poverty eradicated through the optimal and efficient use of natural resources. The social aspect relates to people, the relationship between nature and human beings, access to basic health and education services, minimum standards of security, good governance, and human rights. It also refers to the maintenance of

different cultures, diversity, pluralism and effective grass roots participation in decision making.

The environmental dimension, on the other hand, is concerned with the maintenance of stability and integrity of bio-physical systems, ecosystem conservation, management and sustainable use of biodiversity. It should be recognised that economic goods and services depend on the ecological goods and services.

Recognition of this interplay and building capacity for making decisions that consider the long-term future of economy, ecology and equity, many would argue, is essentially an educational enterprise.

### ***b. ESD***

The Secretary General of United Nations, Mr. Kofi Annan, has stated that; *Our biggest challenge in this new century is to take an idea that sounds abstract – sustainable development – and turn it into reality for all the world's people.* Many would argue that making the abstract real, and developing the capacities of individuals and societies to work for a sustainable future has a lot to do with awareness building and capacity enhancement through education and outreach activities.

People around the world recognize that current economic development trends are not sustainable and that public awareness, education, and training are key to moving society toward sustainability. Building capacity for making decisions that consider the long-term future of economy, ecology and equity is a key task of education and outreach based awareness building.

Agenda 21 and its review at Johannesburg, the BPOA and its review at Mauritius, the Millennium Development Goals (MDG), Education For All (EFA) initiative, United Nations Literacy Decade (UNLD), UN Decade of Education for Sustainable Development (UNDESD) all proclaim that we need to foster, the values, behaviour and lifestyles required for a sustainable future.

Considering the gravity of Anthropogenic impacts on the environment, *environmental education* attracted the attention of many during the last couple of decades. With the full realisation that environmental problems are closely linked to economic and socio-cultural problems, the global community has accepted a more inclusive educational approach, which is being promoted as education for sustainable development, ESD. Here education is not seen merely as 'chalk and talk' exercise, instead a holistic approach involving all stakeholders - young and old, in-school and out of school alike. In such a complex world, we are talking about education for ALL using all modalities such as formal, nonformal and informal educational approaches.

### **3. ESD and the Pacific**

There are several initiatives within the Pacific that embrace the essence of ESD, some of which are listed below:

Formal Initiatives:

- The Pacific WSSD Type 2 Initiative on Education based capacity building
- The Pacific Regional Initiative for the Delivery of basic Education (PRIDE)

- USP as a major partner of the SIDS Universities Consortium
- The recognition of USP as a Regional Centre of Expertise on education for the United Nations Decade ESD

#### Nonformal Initiatives:

- Environmental Education, (SPREP)
- COTS outreach to schools (CSSP, USP)
- SIV Initiative (UNESCO)
- SEARED outreach to schools (GOOS, SOPAC)
- OFS ( CA, USA based NGO)
- PYEN Initiative (UNEP)

#### Informal Initiatives:

- Largely by the Media

### 4. Regional Training Needs

A number of regional training needs assessments, the outcomes of WSSD, the Mauritius International Meeting of SIDS and the regional position papers have all clearly stressed the importance of education based capacity at the individual, institutional and systemic levels to enable implementation of SD strategies at the national level.

### 5. Need for a new PG Programme at USP

Given the importance of capacity building for the sustainable management of environment and natural resources in the Pacific Island region, USP has been offering a number courses and programmes in a variety of fields. While these training programs are of excellent quality, most of them are highly disciplinary in nature and can be pursued only by those with the necessary pre-requisite. Courses with multi (trans) - disciplinary and cross-cutting foci are relatively few. At present, most of the environment courses at the postgraduate level are offered through on-campus teaching, restricting their regional access. There is thus an urgent need for additional new courses and programmes in areas relevant for environment and SD at USP.

### 6. USP's Readiness to offer the Programme

Considering the SD needs of the Pacific, USP has been responding proactively by establishing a number of specialised Institutes, Programmes, Centres, network activities, and dedicated Faculties, a brief description of some of which are given below:

- ***Faculty of Islands and Oceans (FIO)***: The main focus of this Faculty will be the sustainable management of island natural resources both terrestrial and marine and the fragile environment. Particular attention will be paid to the sustainable development challenges of Atoll countries in the Pacific.
- ***PACE-SD***: The Pacific Centre for Environment and Sustainable Development was established by the University in late 2001 to develop a more focussed and collaborative approach to environmental education, research, consultancy and capacity building in the Pacific Island region. The Centre is designed to work with

all other relevant sections of the university, regional and international environmental organisations, regional governments and NGOs to promote environmentally sustainable development.

- **Governance:** USP believes that good governance lies at the heart of sustainable development and is committed to the regions efforts to improve governance at all levels through new and innovative programs. The Pacific Institute of Advanced Studies in Development and Governance (PIAS DG) was established with this goal in mind.
- **Research:** A structured and systematic approach to understanding nature is essential for planning management strategies. Modern as well as indigenous knowledge play equal roles in providing this knowledge base. USP is the regional centre of expertise when it comes to targeted research aimed at problem solving to facilitate SD.
- **Analytical services:** USP has an internationally accredited laboratory for high quality analytical services and several of its departments are well equipped to carry out sophisticated research which is locally relevant and internationally significant.
- **UC-SIDS:** At the Mauritius International meeting of SIDS, an MOU was signed by five universities in SIDS – University of the West Indies, University of the South Pacific, University of Mauritius, University of Malta and the University of US Virgin Island joined hands to offer courses and programs inter-regionally using a common platform. It is expected that a number of training courses will be made available through this initiative.
- **RCE Pacific:** This is another innovative initiative involving several stakeholders to look at education in a holistic fashion, to reorganise curricula to suit new development challenges and to lead targeted research to improve natural resource use more sustainably. USP has been recognized as a regional centre of expertise (RCE-Pacific) for the UN decade of education for sustainable development.

## 7. The new PG Programme: Structure

### ***PART I***

The PG programme in general is envisaged to have both taught courses and research project studies leading to PG Certificate, Diploma and Degree (Masters and PhD). A possible structure for the taught sections of the Programme may be visualized as follows:

*Certificate:* 2 Courses

*Diploma:* 4 courses (2 x Core courses + 2 x electives);

*Masters by course work:* 7 courses + major case studies.

*Masters by Research:* PG Diploma + thesis research

*Doctorate:* Masters + Advanced Research

*Suggested Research areas for Masters, PhD, Post Doc may include:*

- a. Climate Scenario, Food Sec, Water, Energy, health

- b. Natural resource management
- c. ICM
- d. IWM Fisheries, marine
- e. Biodiversity –marine and terrestrial
- f. Community based resource management
- g. Land use, cover change, agroforestry
- h. Land-ocean interactions
- i. Pollution
- j. Indigenous Knowledge Systems
- k. Urbanisation, sanitation, poverty alleviation
- l. Trade and Environment
- m. Environmental Governance
- n. Others

**APPENDIX 1** provides a possible structural arrangement for managing the PG EMSD Programme.

#### **a. Major Goals and Objectives**

The overall goals of the new PG training programme, stated briefly, are:

- To build individual and institutional capacity in the Pacific and other small island developing states to address environmental changes with special reference to human well being.
- To promote teamwork and joint curriculum development and delivery.
- To use e-learning and DFL tools to maximize the efficiency of course offerings.
- To enhance PICs specific research in areas most relevant to SD.

#### **b. Expected outputs**

The training programme will have products and outcomes that will contribute to building the capacities of the pacific island countries by providing the knowledge, skills, perspective and value systems necessary for the sustainable management of the natural resources and the environment.

The specific outputs,

1. A pool of PG courses most relevant to the environment and SD training needs of the Pacific
2. A new academic programme to provide the necessary knowledge and skills to address SD challenges.
3. Increased flexibility in course offering using DFL approaches
4. Collaborative and targeted research projects in the areas of regional priority for SD.
5. More trained people to promote community based conservation efforts and capable of providing leadership in key areas of vulnerability for SIDS to support resilience building.

## PART II

### A Postgraduate Diploma in EMSD: Details

Within the PG Programme for EMSD, a PG Diploma is proposed as a first step.

This diploma may be easily related to the existing PGD in Environmental Sciences/Studies.

The School of Pure and Applied Sciences has been offering a *Postgraduate Diploma in Environmental Sciences (Env. Sci)* and in the School of Social and Economic Development, a parallel programme called *Postgraduate Diploma in Environmental Studies (Env. Stud)* exists. These are inter-disciplinary programmes with natural science or socio-economic emphases. In developing these PG programmes it was decided that the Diploma will consist of four Courses, two of which will be newly developed core courses – one for observational and analytical skills development (mainly natural sciences bias) and the second for training in socio economic aspects of SD in Pacific Islands. These core courses will be common to both the diplomas – Env. Sci and Env. stud. One of the core courses SC 405: Field and Laboratory Techniques in Environmental Sci/stud has already been developed and is in use. However, the second course has not yet been developed. In its place GE407/9 were used instead. With regards to the electives a pool of existing courses was approved for the Env. Sci stream while the electives for the Env. Stud strand the choices have have mostly been from Geography. Please see **APPENDIX 2** for course and structural details.

The proposed new PG Diploma in Environmental Management and Sustainable Development (EMSD) follows essentially the same broad programme structure but takes into account the need to develop the remaining core course taking into the new and emerging challenges to SD in the Pacific, and also to broad base the Diploma in the Env. Stud stream by accommodating essential elements of environmental management and sustainable development principles and practices most relevant for the Pacific Island countries.

The EMSD stream will not duplicate the diploma in the science stream in any way and is not aimed at the same target group. The fact that Geography department has become part of FIO may be an additional reason to focus on EMSD in order to strengthen the non-science strand of the Environmental training.

In addition to the Postgraduate diploma in Env Sci/Stud, there have been a number of efforts within the University to offer *special training courses and programmes* in a variety of areas related to environment and sustainable development.

For example, the PG Certificate in *Climate Change Vulnerability and Adaptation Training* (2x PG Courses) and the two week intensive *Training Institute on Climate and Extreme Events*, both coordinated by PACE, and the *Pacific Island Community-based Conservation Course* (1x PG course), jointly coordinated by IAS and PACE have become very popular in the region. IOI-PI (USP, SPREP) has developed courses using the train sea cost methodologies on *Economics for community based resource management*, and on *Responsible fisheries*. The Physics department in association with SOPAC and UNESCAP has developed and Piloted a *Renewable energy management* training course recently. Most of these are team-taught courses

involving partners from within and outside USP and there is a lot of dependency on external funding sources to make them available to the Pacific region.

Within the scope of the PGD in EMSD, there is the opportunity for these special training courses to be integrated into the Diploma programme making them far more accessible and viable.

The course details for the proposed new Diploma in EMSD are given below:

Programme requirements: 2 x Core courses + 2 x electives.

### ***i. Core Courses***

1: SC405 (ST 405?): *Field and Laboratory Techniques in Environmental Sci/stud*

*(covers data gathering and processing methods applicable for environmental studies in Physics, Chemistry, Biology, Earth Science, GIS/RS, and Geography; field based project work.)*

(in future: some *Generic Skills* in project proposal writing, project management, organisational and interpersonal skills, marketing and business plans may be factored into this course).

2: IO 401 (?): *Environmental Change and SD in the Pacific*

(to be developed: aspects of GE409 + Agenda 21, WSSD, BPOA, MS (BPOA+10), MDG type approach.)

### ***ii. Electives***

1. Pacific islands community based Conservation Course (PICCC)
2. Climate: long-term change, current variability, extreme events, scenarios, vulnerability, resilience building, responses. (V&A + Climate Insti)
3. Integrated Coastal Management (ICM): coastal ecosystems, LOICZ, Coastal communities, climate and coast, economic evaluation of natural disasters.
4. EIA/SEA: NSDS, Development priorities, EIA, case studies, SEA and NSDS
5. Integrated waste management (IWM)
6. Renewable energy (PH-SOPAC training course)
7. Community based Conservation and Resource management (IOI-PI courses)
8. Courses to be made available through the new SIDS Universities Consortium.
9. Others

## **8. Programme Development**

If FIO embraces a structure involving two parallel streams consisting of a teaching arm (MS, IOI-PI, GE, LM, TH, AG) and a special services arm (IAS, IRETA, IMR, OCAC, PACE-SD), the thematic areas Island and Oceans may be covered by the former stream and the environment theme by the latter. While the teaching sections provide disciplinary and interdisciplinary post graduate programme, the special services consortium could provide multi (trans) disciplinary PG training (**APPENDIX 2**).

## 9. Programme Delivery

### a. Modalities

The new PG programme courses may be offered through different modalities, for example, Seminar Courses, Internship Course, Full research courses, On-campus + in-country project courses and On campus courses, whole spectrum DFL courses.

### b. Innovations

Traditionally, institutes and centres do not get involved in formal teaching but of late this pattern has changed. In a Faculty such as FIO an innovative approach would be that the boundary between formal and non formal teaching blur a bit providing a seamless continuum for PG training involving:

- i. E-networked courses (e.g. API satellite seminar course involving the Uni of Hawaii, United Nations University, Asian Institute of Technology, the University of the South Pacific, National University of Samoa and Keio University) delivery and service mechanisms may be used as:
- ii. Seminar course (API model, course is a series of 3 hour seminars conducted by a group of experts)
- iii. Campus + Internship Courses (part of the course is an internship at private sector, government, CROP agencies etc where the students are paid during the internship)
- iv. Campus + in country project work (supervised by local experts)
- v. Special courses (research at workplace under supervision)
- vi. Credit based graduation (assigning a credit value to both semester long courses and shorter formal training)

## 10. Target Groups

The following are the main target groups:

- Personnel from pacific island and other countries which may include employees from government agencies, departments and environment divisions and private students.
- Postgraduate students at USP.
- Participants from other small island developing states SIDs where the programme may be established.

## 11. Partners

A number of potential partners, from within and outside USP are expected to be involved in the development and delivery of the proposed PG programme. Some of the external institutions with which we have been working in the past are: ICPL, University of Wales, UK; UNU; UNEP, UNITAR, UNDP, CS, UC-SIDS, API, URI, CROP, and NGOs

## 12. Advantages

There are a number of reasons why a proposal for a collaborative Diploma may be seen timely and appropriate:

- All the major potential partners in this new Programme have substantial experience in regional and international training of the type being proposed and both agencies have been running such training on a regular basis.
- The innovative feature of the course development in this programme is its distance and flexible learning (DFL) compatibility. USP has developed a strong DFL programme supported by its Centres and its sophisticated satellite communications network, USPNet. Recently its Internet bandwidth has been expanded considerably making e-learning much easier than before.
- PACE has been working closely with UNEP in offering MEA training in the region and has just recently completed a regional training on Regional SEAs MEA capacity building. One of the major outcomes of the WS is a decision to provide an MEA training using the training resource manuals and materials developed by UNEP.
- PACE has developed recently a draft EIA and has been negotiating with UNU for use of their web-based SEA training.
- IAS has close linkages with University of Rhode Island for the development of integrated coastal management training and we have been working together on Waste including chemical waste.
- Sustainability of such special training has always been a matter of concern for us. This is where the SIDS Universities consortium and the RCE Pacific will be able to play an important role.

All these initiatives could be consolidated into the new PG programme.

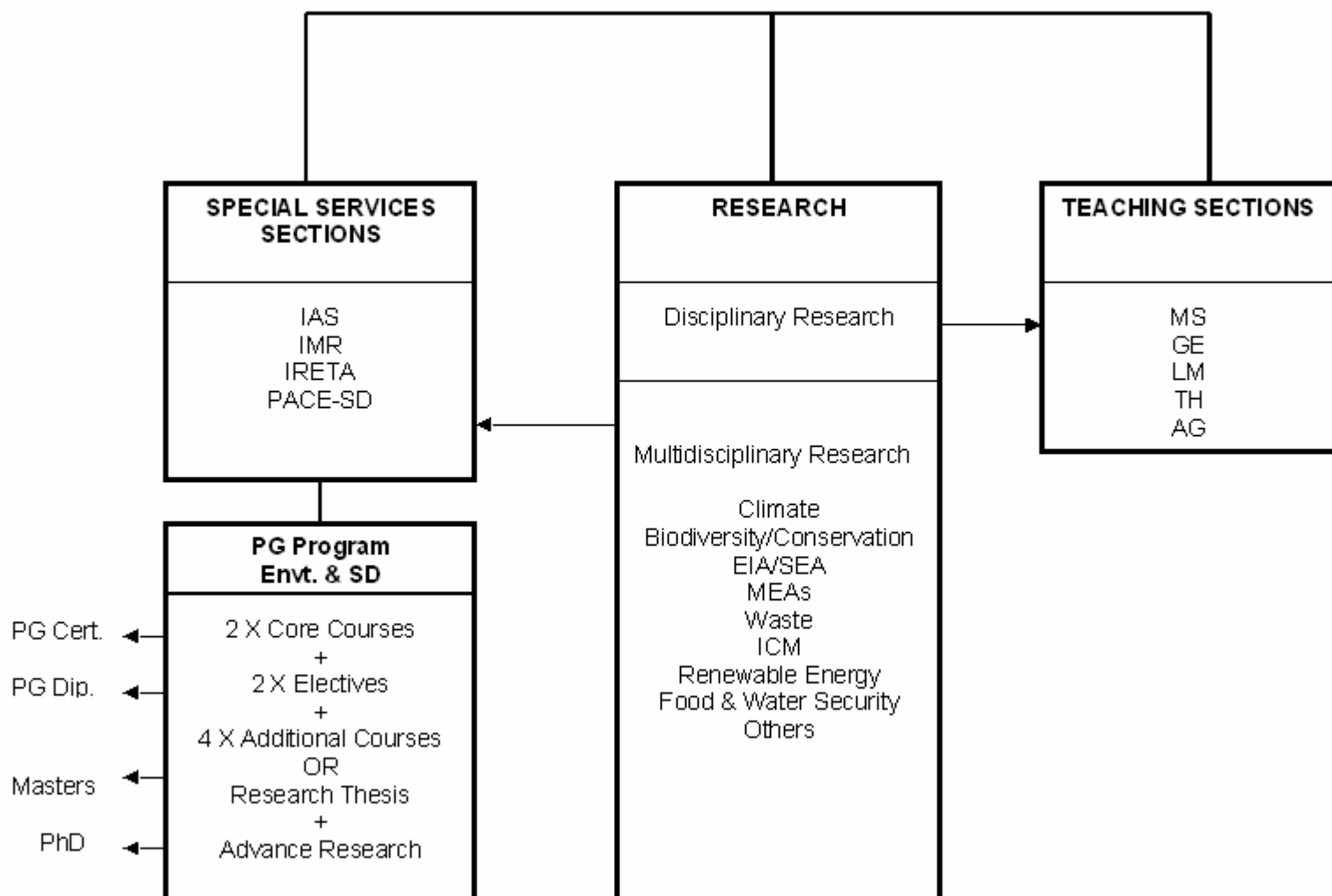
### **13. Programme Coordination**

The overall coordination of the program may be provided by PACE if appropriate with other departments, Institutes or Centres assuming responsibility for courses developed largely by them. PACE has been coordinating multidisciplinary courses on climate change and also a conservation course.

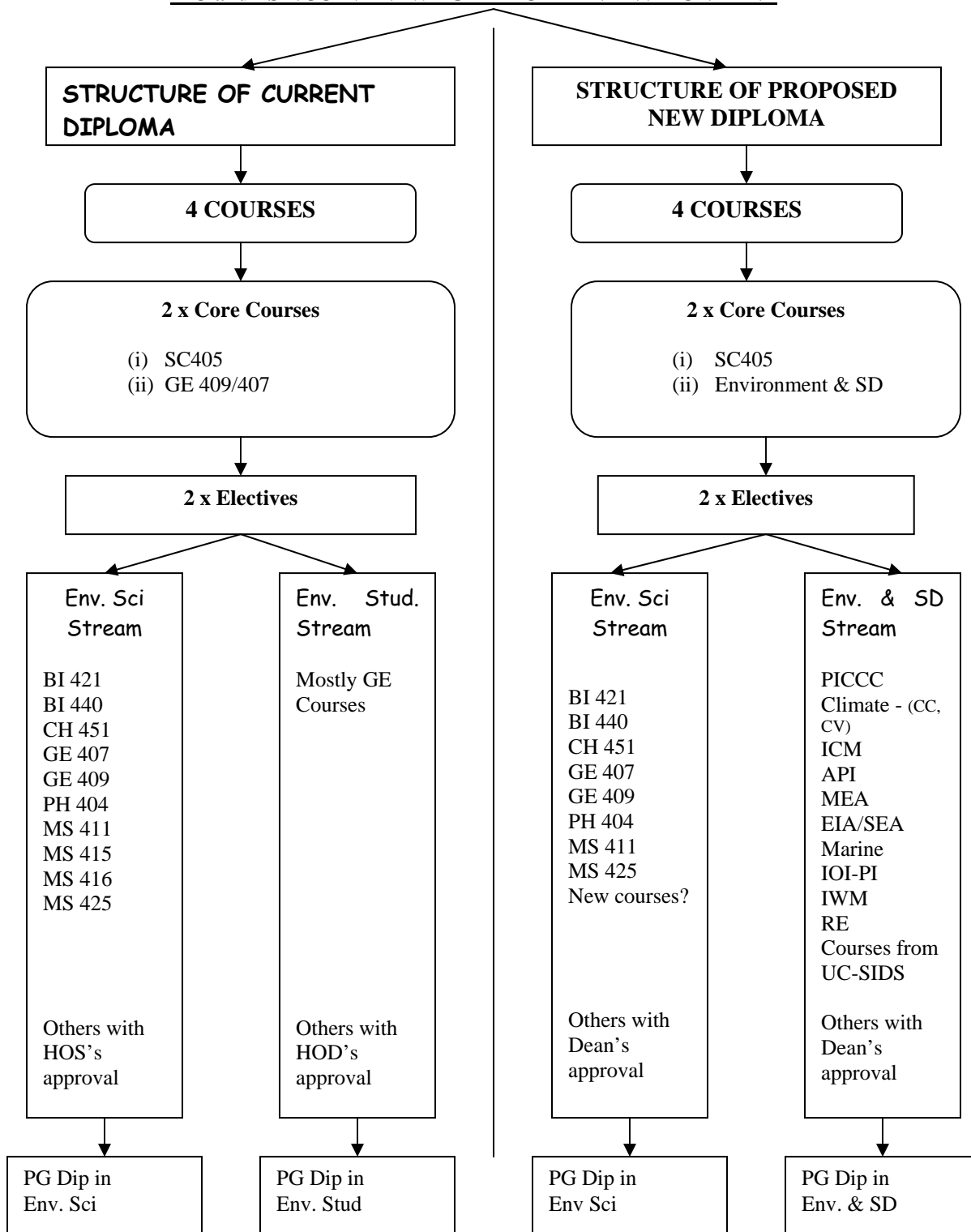
### **14. Programme Sustainability**

- a. Offer as part of the FIO PG Program
- b. UC-SIDS
- c. Global
- d. Donors – financial viability
  - i. Major Donors: EU, GEF, Bilateral
  - ii. Minor Donors: DAAD, Germany, UNEP, UNESCO, UNDP, Commonwealth Secretariat..

**15. Indicative Budget** (three years: course development, preparation of resource materials for DFL conversion, piloting video conference training, scholarship support, networking, appointment of programme coordinator, etc). Exact details to be worked out, but close to USD 800,000.

**APPENDIX 1****FACULTY OF ISLANDS and OCEANS**

## APPENDIX 2

**FIO and FST: JOINT NEW PG DIPLOMA IN ENVIRONMENT**

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