Darwin Initiative for the Survival of Species

Half Year Report (due 31 October each year)

Project Ref. No.	13-012
Project Title	Integrated River Basin Management in the Sepik River
Country(ies)	Papua New Guinea
UK Organisation	WWF-UK
Collaborator(s)	PNG Department of Environment and Conservation, Ambunti Local Level Government, Ambunti District Local Environment Foundation (ADLEF), and project area communities
Report date	1 April - 30 September 2004
Report No. (HYR 1/2/3/4)	1
Project website	http://www.wwfpacific.org.fj/wetsepik.htm

1. Outline progress over the last 6 months (April – September) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up).

Progress towards project milestones:

i) Confirm partnership agreements (Q1): The confirmation of partnership agreements between various partners and stakeholders in the national and local level has shown positive affirmation of better working relations. WWF PNG established and maintained the collaboration between the PNG Department of Environment and Conservation and Ambunti District Local Environment Foundation (ADLEF). WWF also strengthened the partnership network with other NGO's and government institutions such as the PNG Department of Agriculture and Livestock (DAL), provincial government, local level government, and most importantly the local communities. This has enabled the better communication and facilitation of community planning and awareness mechanisms for the indigenous communities.

ii) Consultants and staff hired (Q1-2): A position description for the WWF PNG Freshwater Programme Manager was formulated A copy is attached (**Attachment A**). The position vacancy announcement for a Freshwater Programme Manager was advertised in the major PNG newspaper on 9 June. A copy of the advertisement is attached (**Attachment B**). The closing date for applications was 25 June. We received six applications and interviewed two of those. The number one candidate is currently working outside Papua New Guinea and earning about three times the budgeted amount for the position. The number two candidate contacted us after her interview to say she wanted to withdraw her application as she decided to remain in her current position at the University of Papua New Guinea. The other four applicants were not suited for the position. WWF has therefore named an existing member of WWF PNG staff to fill the position on an acting basis. The acting Freshwater Programme Manager is Ted Mamu, a Conservation Science Coordinator, who has worked with WWF PNG since 1999. The position will be re-advertised on 1 and 3 November in the leading PNG newspaper. It will also be posted on the WWF International website: http://www.panda.org/about_wwf/jobs/publication.cfm?uNewsID=16251&uLangId=1

iii) Complete background reviews of programme sites (Q1-2): The background reviews of the programme site have been planned for the next reporting period. GIS modelling of the programme site prepared by WWF Madang GIS officer are in initial stages. The draft map and description of the programme area of the Integrated River Basin Management in the Sepik River are yet to be fully developed.

iv) Formulate education strategy and produce awareness materials (Q2-3): Because of the delay in appointing a Freshwater Programme Manager, the formulation of the education strategy and awareness materials production is now planned for the next reporting period.

v) Communications materials on values of the Sepik River (Q2-3): The communication materials on values of the Sepik River documented to date are as follows:

- Brochure of Integrated River Basin Management in the Sepik. The brochure contains the following information: project area, conservation areas, goal and objectives of the freshwater programme in Sepik, some proposed activities and collaborators, and opportunities for capacity building involving other partners. The intended audience is partner agencies and the general public.
- A brochure on ecotourism in the Sepik River Basin is being prepared. The brochure provides information of eco-tourism industries along the Sepik River and the East Sepik Province at a smaller scale involving the people from the local communities to participate more meaningfully and sustainably utilising the natural resources. The brochure is intended primarily for tourists.
- A report entitled 'The Final Frontier Towards Sustainable Management of Papua New Guinea's Agarwood Resource' (funded by other sources) provides information about the importance of the eaglewood species, initial findings with geographical and ecological distribution, harvest and trade dynamics, and recommendations for further awareness targeting different stakeholder groups including landowners, traders, government officials, and other commercial operators. www.wwfpacific.org.fj/agar2.pdf
- Ethnobotany report (in draft, so far funded from other sources) prepared with the assistance of former WWF Sepik Community LandCare Project staff documenting useful plants of the Yerakai people of the Middle Sepik area.

Broader context:

vi) The WWF Papua New Guinea Freshwater Strategy has been formulated. A copy is attached (**Attachment C**). WWF will focus its freshwater work on the Sepik and, with funding from other sources, on the Kikori Catchment and the TransFly Ecoregion. These are the largest and most diverse wetland ecosystems in PNG where the opportunity exists for WWF to be instrumental in averting major threats and to achieve significant conservation outcomes. WWF PNG is grateful to Jane Madgwick, formerly of WWF-Australia and now CEO of Wetlands International, who facilitated this process and provided technical advice.

vii) The project agreement between WWF-UK and WWF South Pacific was signed on 20 August and the first transfer of funds (GBP17,557 = PGK100,490) was received in Port Moresby on 21 September.

Next Steps:

viii) Ted Mamu will conduct an introductory trip to the Sepik project area, 22-28 October. His trip plan is attached (**Attachment D**). He will be travelling with a WWF-UK communications staff member, a WWF-UK contracted photographer, and WWF PNG's Sustainable Resource Use Trainer.

ix) Following Ted's trip, staff will begin to work with ADLEF to formulate the project's education strategy and to produce awareness materials.

x) Ted will also participate, with the WWF-UK project manager, in a WWF Asia-Pacific Integrated River Basin Management Workshop to be held in Bangkok, 6-8 November.

xi) The ADLEF staff will assist in producing and carrying out the educational awareness in the local communities for the protection and sustainable use of the natural resources.

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

- A suitable candidate to fill the position of Freshwater Programme Manager has not been identified. WWF has therefore named an existing member of WWF PNG staff to fill the position on an acting basis and will readvertise.
- As funds are to be reimbursed to WWF PNG following receipt of financial reports, WWF-UK has advanced funds to WWF South Pacific to enable implementation to begin.

Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?

No.

Discussed with the DI Secretariat:	**no/yes, in……. (month/yr)**
Changes to the project schedule/workplan:	**no/yes, in…….(month/yr)**

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

No.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any <u>planned</u> modifications to your project schedule/workplan or budget should <u>not</u> be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form by 31 October each year per email** to Stefanie Halfmann, Darwin Initiative M&E Programme, stefanie.halfmann@ed.ac.uk . The report should be between 1-2 pages maximum. **<u>Please state your project reference number in the header of your email message.</u>**

Attachment A – Position Description, Freshwater Programme Manager

WWF SOUTH PACIFIC PROGRAM
Position Description

Position title: Freshwater Programme Manager, Papua New Guinea

Reports to: Conservation Manager, Papua New Guinea

Supervises: Freshwater staff

Grade: 4

Location: Port Moresby

Date: 27 April 2004

I. Major Functions:

Establishes and overseas the implementation of a new freshwater conservation programme as part of WWF PNG's broader conservation programme as per the document entitled "Proposal for an Integrated WWF Freshwater Programme in Papua New Guinea". Ensures WWF PNG meets its commitments to WWF's global freshwater target driven programme. Operationalises and oversees the implementation of one or more freshwater projects.

II. Major Duties and Responsibilities:

1. **Programme development:** Establishes and overseas the implementation of a new freshwater conservation programme as part of WWF PNG's broader conservation programme as per the document entitled "Proposal for an Integrated WWF Freshwater Programme in Papua New Guinea". Ensures WWF PNG meets its commitments to WWF's global freshwater target driven programme.

2. **Project Implementation:** Operationalises and oversees the implementation of the "Integrated River Basin Management (IRBM) in the Sepik River" project. Working with the freshwater team, plans, directs, coordinates, and oversees implementation of the project in accordance with contractual agreements, WWF field operations policies and procedures, the project description, and approved workplans and budgets. Works with the freshwater team to develop quarterly project and position-specific workplans. Manages the projects and the freshwater team using a participatory, adaptive management approach.

3. **Technical Leadership:** Provides technical freshwater leadership to WWF's work in Papua New Guinea, including: basin conservation, protected areas, community-based freshwater planning and management; fisheries policy/development; formal and informal freshwater conservation education; and project monitoring and evaluation.

4. **Staff Training:** Develops and implements a participatory staff training needs assessment process. Oversees the formulation of a staff-training plan. Works with staff to develop and implement training plans.

5. **Staff Supervision:** Supervises personnel and evaluates performance per WWF policies and procedures. Ensures position descriptions are maintained for all staff positions.

6. **Advocacy:** Takes the lead in formulating WWF PNG's positions with respect to freshwater conservation and ensuring these are communicated to others.

7. **Monitoring and Evaluation:** Takes the lead in developing a monitoring and evaluation system for the projects. Ensures implementation of the plan. Facilitates annual internal project staff reviews and documents outputs.

8. **Reporting:** Prepares technical reports with strict adherence to deadlines. Prepares other technical reports as needed or requested.

9. **Consultancies:** In consultation with others, identifies needs for short-term technical assistance, develops terms of reference for consultants. Identifies, recruits, and supervises consultants, causal staff, and volunteers as required.

10. **Collaboration:** Collaborates with other organisations and agencies in Papua New Guinea as needed. Shares information about the freshwater programme as appropriate. Establishes and maintains communications and cooperation between communities, partners, organisations and government departments relevant to the programme (local, national and international). Identifies and pursues areas of assistance and/or collaboration between existing and proposed PNG freshwater initiatives and the freshwater programme.

11. **Workshops and Meetings:** Assists in the design and conduct of workshops and meetings.

12. **Finance & Administration:** Monitors expenditures against budgets. Ensures establishment of financial management and administrative systems for the project. Ensures compliance with donor regulations. Approves expenditures and financial reports in accordance with procedures established by WWF. Prepares annual budgets and quarterly cash flow projections. Determines the material requirements of the project and initiates procurement.

13. **Communications:** Works with others in the drafting of media stories related to the work of WWF in Papua New Guinea. Speaks with the media as appropriate.

14. **Fund Raising:** Works with other WWF staff to develop complementary funding proposals.

15. **Programme Support:** Acts as a member of the WWF PNG Senior Management Team. Participates in quarterly Senior Management Team Meetings. Provides support for other WWF country, regional, and international work as requested.

16. **Professional Development:** Monitors new technical information, policy developments, issues, and trends in area of expertise. Continues to maintain status and progress in professional field through, e.g., preparation of papers for publication, participation in professional fora, etc.

17. **Other duties:** Carries out other position-related activities as required.

III. Supervisory Responsibility:

Supervises, trains, and evaluates project staff and short-term technical consultants.

IV. Working Relationships:

1. **Internal:** Works in close collaboration with the freshwater team and the senior management team of WWF PNG. Ensures linkages with WWF PNG's marine and forest programmes. Occasional contact with WWF staff from other programmes and national organisations.

2. **External:** Collaborates with other organisations and agencies in Papua New Guinea as needed.

V. Minimum Work Requirements:

1. **Knowledge:** A university degree in a freshwater conservation related field. Knowledge of community-based approaches to freshwater conservation is essential.

2. **Experience:** At least five years of experience managing freshwater projects in Papua New Guinea is required. Must have experience in the design, implementation, and monitoring of freshwater conservation projects. Preference will be given to individuals with experience in participatory approaches and with experience in working with government counterpart agencies, NGOs, and community-based organisations.

3. **Skills and Abilities:** Requires excellent project management skills including project planning, personnel management, staff training, and monitoring. Requires excellent oral and written English communication skills. Must be computer literate (Word, Outlook, and Excel). Must possess a demonstrated ability to work effectively as a member of a multidisciplinary team. Fluency in Tok Pisin is highly desired

Attachment B - Position Vacancy Announcement

WWF is an independent conservation organisation with a global network of offices. WWF works closely with governments, NGOs, and national and regional institutions to support science-based initiatives in natural resource management and sustainable development. In the South Pacific, WWF focuses on local community action, awareness raising, scientific research, capacity building, and the sustainable use of forests, wetlands, and marine resources. WWF is now seeking qualified Papua New Guinea citizens to fill the following vacant positions:

Freshwater Programme Manager (Port Moresby)

The Freshwater Programme Manager is responsible for establishing and overseeing the implementation of a new freshwater conservation programme as part of WWF PNG's broader conservation programme. Operationalises and oversees the implementation of one or more freshwater projects. Prepares fundraising proposals to fund freshwater projects. The ideal candidate will posses a university degree in a freshwater conservation related field. Knowledge of community-based approaches to freshwater conservation is essential. Must have experience in the design and implementation of freshwater conservation projects. Preference will be given to individuals with experience in participatory approaches and with experience in working with government counterpart agencies, NGOs, and community-based organisations. Requires excellent project management skills including project planning, personnel management, staff training, and monitoring.

Sustainable Forestry Coordinator (Port Moresby)

The Sustainable Forestry Coordinator is a senior position responsible for leading staff in the implementation of projects to promote sustainable forest use. Assists in developing examples of sustainable management of community-owned forests. Develops and promotes systems for certifying sustainable harvest for timber and non-timber forest products at a range of scales and promotes trade in products from certified forests. Plays an active part in improving the policy environment for sustainable forestry including addressing illegal logging. The ideal candidate will have a degree in forestry, natural resource management, or a related field. Knowledge of community-based approaches to natural resource management is essential**.** The incumbent must posses the ability to lead a team of professional foresters and community workers and have at least five years of field experience in managing conservation and/or development projects. This position was advertised in September of last year. Additional project management duties have been added and conditions have been increased.

Administration Officer (Daru)

The Administration Officer is responsible for all financial and administrative functions of the Transfly Project. Maintains a thorough understanding of WWF policies and procedures, donor regulations, and applicable laws of Papua New Guinea and ensures project compliance. Performs all secretarial and clerical functions: maintains petty cash, office bank account and financial reporting, makes arrangements for staff travel, receives office visitors, maintains files, answers the telephone and conveys messages, and prepares document deliveries. Ideal candidates will have degree in accounting and have at least three years experience in a similar position.

All applicants must possess a demonstrated ability to work effectively as a member of a multidisciplinary team. Must have excellent written and verbal communication skills in English and Tok Pisin and familiarity with a range of standard computer programs.

All applications should be fully documented and include relevant details of qualifications, experience and names and contacts of three referees. Applications should clearly mark the position and should be addressed to the Human Resources Officer, WWF, PO Box 8280, Boroko or emailed to: gandrew@wwfpacific.org.pg. For further information please contact the HR Officer on telephone 323 9855. The deadline for applications is 25 June 2004. Position descriptions can be obtained from our website at: http://www.wwfpacific.org.fj/.

WWF Papua New Guinea Freshwater Programme Strategy

Biodiversity of Freshwater Ecosystems in Papua New Guinea

An overview of PNG's freshwater wetlands is provided by Leach and Osborne (1985) and Osborne (1989). As PNG is predominantly a rugged, mountainous country receiving rainfall between 2500 and 10,000 mm/year, over 80% of lakes are associated with the large rivers, at 40m above sea level or less. Most lakes are small ponds and tarns (les than 0.1ha), but there are a few large lakes including the shallow Lakes Murray and Chambri and the deep, upland lakes of Lakes Wisdom, Dakataua and Kutubu. The vegetation of the lowland wetlands is broadly classified into herbaceous swamps, savannah swamps, woodland swamps and swamp forests. The freshwater flora comprises eight species of Characeae, 21 species of ferns and 130 species of flowering plants. Freshwater algae have been poorly studied. The native fish fauna includes 316 species, divided into two major zoogeographic subprovinces - north and south of the central mountain range, with the southern province more species rich due to the relatively long, stable geomorphological history. Amphibians and reptiles are well represented, with more than 200 species of frogs described from 5 families, 3 aquatic snake species, 11 species of tortoises and turtles and 2 species of crocodiles - which occur throughout the low lying wetlands. 115 of the 700 bird species listed for New Guinea are waterfowl and 6 of these are endemic to PNG.

Most wetlands in PNG are thought to be in good ecological condition. However, the country lacks a systematic or comprehensive wetlands inventory and a monitoring system. Some wetlands (such as the Fly River) are already significantly impacted by mining activities and others are likely to be threatened by additional mine developments and by industrial logging activities. There are few studies to establish or predict the nature or severity of major development impacts on wetlands. Most of the lowland river and lake systems are significantly affected by invasive species - aquatic plants and fish introductions. Further introductions are a continuing major threat to natural ecosystems, their biodiversity and human use values.

Conservation of wetlands in PNG

The communities of PNG value their traditional landownership system, which includes sustainable management approaches. Most people live a subsistence lifestyle and natural wetland resources are valued highly in certain regions, such as the TransFly and Sepik. However, there are strong pressures for communities to push for cash solutions to educate their children and for health care. The National Government (Department of Environment and Conservation, DEC) has a number of Acts and regulations intended to protect the environment but due to a lack of resources and capacity, these are poorly enforced and regulatory powers are shifting to local and provincial governments, which have even less capacity to carry out environmental assessments or to administer sound land-use planning. On the positive side, there is a National Government commitment to work with communities to integrate water resource management into land use decisions, poverty alleviation, food security and health matters. The Fauna (Protection and Control) Act (1966) allows for the establishment of customary owned Wildlife Management Areas and also provides for controls on the taking, possession and trade of species from land of any tenure. WMAs are managed by a committee comprised of locally elected customary

landowners. Due to budgetary constraints, the amount of technical support provided by DEC to the WMA system is very small.

The Government is signatory to the Ramsar Convention on Wetlands and the Convention on Biological Diversity. There are a number of local, national and international NGOs working towards improved environmental management in PNG.

Context in WWF's Global Freshwater Programme

The mission of WWF in the South Pacific is to support landholding communities in the Pacific to protect and sustainably manage their natural resources. Improved protection and management of water and wetland resources is a high priority for WWF in Papua New Guinea (PNG), given:

- the global importance for biodiversity (New Guinea Rivers and Streams G200 Freshwater Ecoregion);
- the presence of some of the worlds largest, free-flowing river systems, the threats to these values linked to *ad hoc* major developments that also threaten key marine habitats and fisheries;
- the opportunity for WWF to demonstrate effective integration of forest and freshwater conservation, through an integrated catchment management approach, building on current WWF partnerships with government and industry groups and credibility with local communities; and
- WWF's intent to contribute to poverty alleviation, economic and social well-being, access and availability to water and wetlands for drinking, food production, energy generation and other social uses in mega-diverse developing countries.

Some freshwater and wetland conservation issues have been identified by WWF in PNG through the work of Forest Programme, the Marine Programme, the Kikori Integrated Conservation and Development Project, the TransFly Ecoregion Action Plan (EAP) and TriNational Wetlands Agreement. Additionally, WWF has had a substantial presence in addressing natural resource management in parts of the Sepik River catchment over the last 6 years. A number of activities within these projects will address WWF's Freshwater Objectives to some extent. However, there are significant gaps in these programmes - for example the Forest Programme does not currently identify critical forest areas where logging activities would trigger significant downstream ecological impacts. Equally, the Marine Programme has not identified the location and types of critical land-based activities that may impact marine priority areas through the alteration of freshwater flows, sedimentation or water quality. The TransFly EAP is attempting to address the conservation terrestrial and freshwater ecosystems in an integrated manner, this work would greatly benefit from a national approach being taken to tackle some of the major threats, such as invasive species. Finally, while WWF projects operate in the vicinity of a number of internationally and nationally significant wetlands, WWF currently has little or no capacity to engage local communities, government or industry stakeholders to progress wetland conservation outside of the TransFly.

WWF is uniquely positioned to take a lead in progressing the conservation of freshwater ecosystems in PNG. No other partner or environmental NGO has an established presence in PNG to address freshwater conservation at the country and major catchment level. The Government has too few resource to support implementation of wetland conservation policies and measures but is committed to working with WWF to progress its Total Catchment Environment Management (TCEM) policy through trials in the Sepik Basin.

There are also opportunities to deepen existing strategic partnerships, and to facilitate community capacity building for wetland conservation - for example through collaboration with Wetlands International, the Kikori Joint Venture Participants, the Community Development Initiatives Foundation (CDI), the Sepik Wetlands Management Initiative (SWMI) and Provincial Governments.

There is now a need and opportunity for WWF to develop a concerted and coherent program to address key water and wetland management conservation in PNG, that is fully integrated with (and adds value to) the above Programmes and projects and links to associated work in West Papua. The Freshwater Programme will address freshwater ecosystems in key ecoregions and contribute to the global WWF Living Waters Programme targets and milestones.

Geographic Priorities

A broad-brush Values and Threats analysis was undertaken to assess the relative merit of WWF working in the seven major catchments making up the New Guinea Rivers and Streams Global 200 Ecoregion - the Sepik, Ramu, Purari, Fly-Strickland, Kikori, TransFly and Aramia-Turama (see Table 1 in Appendix for details). This analysis compared:

- **freshwater biodiversity values** (based on national wetland assessment data that considered habitat representativeness, species richness and endemism, the presence of internationally significant wetland sites and proximity of priority terrestrial and marine ecosystems that are linked by freshwater ones),
- **existing and likely threats to those values** (based on existing major threats to the integrity of freshwater ecosystems and proposed developments (such as for mining, logging, oil exploration)); and
- **the feasibility of WWF progressing conservation measures** (based on WWF presence, existence of key partners, and the likelihood of success in averting key threats)

A comprehensive list of criteria was developed to enable further analysis of priority wetland sites for WWF action (see Appendix for details).

Priority Catchments:

The analysis concluded that WWF should focus on **the Sepik and Kikori Catchments and the TransFly Ecoregion** (complex of catchments) in its Freshwater Programme, since these are the largest and most diverse wetland ecosystems in PNG, where the opportunity exists for WWF to be instrumental in averting major threats and to achieve significant conservation outcomes.

Priority Wetland Sites:

In addition to focusing on these 3 major catchments and ecoregions, consideration was given to the list of nationally significant wetland sites (PNG Conservation Needs Assessment, 1993). It was concluded that as well as progressing action at the whole catchment level in the Sepik, Kikori and TransFly, the following sites should be prioritised for WWF action:

Kikori Karst/Lake Kutubu (Mid-Altitude Wetlands)
PNG's largest highland lake with 11 endemic fish species threatened by over-exploitation and introduction of alien fish. Extensive freshwater karst ecosystems that are biologically almost unknown.

Middle Sepik (Lowland Freshwater Swamps)
Huge complex of river meanders, oxbows, tributary lakes, marshes and woodland swamps of high ecological and economic importance - along PNG's largest, free-flowing and largely unpolluted river. Supports the most ecologically and commercially significant crocodile population in New Guinea and a number of endemic fish species representative of the Great Northern fish zoogeographic subprovince. Significant subsistence fishery supporting a large human population.

Middle Fly and Lake Murray (Lowland Freshwater Swamps)
One of the world's great rivers in terms of discharge. 15-20 km wide floodplain is a mosaic of lakes, alluvial forest, swamp grassland, and swamp savannah. Includes PNG's largest lake. Supports a number of endemic fish species representative of the Great Southern fish zoogeographic subprovince. Significant subsistence fishery.

Lower Fly (Lowland Freshwater Swamps)
Mosaic of swamps, open water, savannah and gallery forest. Internationally important refuge for migrating birds. Outflow of the Fly is of critical importance to the Gulf of Papua.

Tonda/Bulla Plain (Lowland Freshwater Swamps)
Savannah and riverine gallery forest unique in PNG. Large areas of savannah and seasonally flooded grasslands and marshes are a globally significant wintering ground for waders and waterfowl from Australia and the Palearctic.

Sepik Delta/Middle Ramu (Saline Brackish Swamps)
Coastal wetland/deltaic complex linked ecologically to a low alluvial meander belt of the Ramu River, rich in swamp forests. The Sepik outflow is critical to support offshore fisheries - and supports one of the four globally significant marine areas in PNG waters (identified through the Bismarck-Solomon Seas Ecoregion visioning workshop, 2003).

All of these sites (excepting the Middle Fly and Lake Murray) occur in the Priority Catchments. WWF should give priority to those sites found also in priority catchments.

WWF should give further consideration to addressing conservation of other significant wetland sites (insufficient information currently):

Sissano Lagoon and Wetlands - largest coastal lagoon on the north coast
Sirunki Wetlands - an important highland headwaters draining into the Sepik and Fly Rivers
Lake Tebera - one of PNG's few lower montane lakes
Lakes Bune and Onim - small lakes surrounded by herbaceous wetland
Ramu River, Brahmen - lowland swamp forest

Linkage to Forest and Marine Programmes

Many Priority Wetlands are in the proximity of WWF's priority forest areas - including the Upper Sepik and Upper Kikori, the Bosavi-Aramia region and the northern TransFly. The Sepik River and Delta is a globally important site for the Marine Program on the basis of crocodile habitat and contribution of the Sepik outflows to marine fisheries. The inter-relationship between the Forest, Freshwater and Marine Programmes of WWF in PNG will be further explored following a GIS analysis.

Priorities for Action

The overall goal of the Freshwater Programme is

To conserve the biodiversity and ecological processes freshwater ecosystems in Papua New Guinea's portion of the New Guinea Rivers and Streams ecoregion

This long-term, aspirational goal is proposed as one that WWF can contribute to over time by working with a large number of institutions in PNG and internationally.

It is recognised that in the PNG context, the most urgent and important sub-goal is "**to develop the capacity and governance mechanisms of PNG institutions and communities to effectively manage freshwater and wetland resources**."

Strategies for Implementation

Integrated River Basin Management (IRBM)

This term is synonomous with Integrated Catchment Management, Integrated Water Resource Management (IWRM) or Watershed Management. IRBM provides a basin-wide framework for making strategic decisions in favour of water and wetland management that is economically, socially and environmentally sustainable.

In WWF's view,
Integrated river basin management (IRBM) is the process of coordinating conservation, management and development of water, land and related resources across sectors within a given river basin, in order to maximize the economic and social benefits derived from water resources in an equitable manner while preserving and, where necessary, restoring freshwater ecosystems.

The Sepik and Kikori river catchments represent two of the most intact and biologically rich environments in PNG, and for that matter in the Asia Pacific region. An IRBM approach in these two catchments will integrate and build on the natural resource management activities of a large range of organisations and community groups in these basins. Most importantly, it will build the capacity of PNG institutions and communities at the national and local level to manage catchments of high biological value and low human development.

A whole catchment scale approach is timely as the PNG Department of Environment and Conservation (DEC) have recently expressed a strong interest in establishing approaches and systems for implementing its Total Catchment Environment Management (TCEM) policy through trials in the Sepik Basin. Through this strategy, WWF and partners will

also assist the PNG Government to fulfill its obligations under the Convention of Biological Diversity and the Ramsar Convention on Wetlands.

The IRBM approach will build on WWF's past work in these two basins. WWF has supported a range of activities in the five southern sub-catchments of the Upper Sepik Basin including: establishment of protected areas; sustainable harvest of freshwater and forest products; ecotourism; health care and community education. WWF recently reviewed the priorities for future work in the Sepik and have sought funding for an Integrated River Basin Management project through the Darwin Initiative, in association with WWF-UK. Inclusion of this project within a WWF Freshwater Programme will bring greater emphasis to the protection and management of water and wetland resources within the Basin.

In the Kikori, WWF has been implementing the Kikori Integrated Conservation and Development Project (ICDP) since 1994, together with the Joint Venture Participants of international oil companies. This work has focused on completing extensive biodiversity surveys, raising community awareness on the negative impacts of industrial-scale logging, assisting Lake Kutubu communities to develop a community-driven fish management strategy, assisting the establishment of Wildlife Management Areas and assisting community groups to establish eco-enterprises. WWF is currently reviewing Phase 4 of the ICDP but there is an intention for a focus on conservation science, community education and awareness raising plus a strengthening of collaboration with the Community Development Initiative, other partners and communities in the Kikori Basin. There is substantial freshwater biological survey and monitoring information available for the Kikori Basin and some strong community partnerships. By making an IRBM approach a priority within Phase 4 of this project, there is an opportunity to capitalise on past work and to bring about larger scale conservation outcomes. A shift in focus of the roles of some existing staff will be required as well as a new focus on sub-catchment and whole catchment activities. However, a number of staff already have a whole catchment focus and responsibility.

Without implementation of an IRBM approach, the impacts of planned infrastructure developments, use of wetland resources, logging activities, and other land use activities in different parts of the catchments will not be fully reconciled with conservation objectives - and valuable water and wetland resources will be lost or degraded over time. In the case of the Sepik and Kikori catchments, this will result in globally significant losses of biodiversity (terrestrial, freshwater and marine) and reduced opportunities for local communities to sustain their livelihoods from natural resource harvesting, tourism, subsistence agriculture and other potential income-generating activities.

WWF's strategy will therefore be to work with stakeholders and partner institutions at a number of scales (national, whole basin and local levels), to build sufficient capacity to make informed decisions about sustainable use and management of natural resources. It will be important to tailor WWF's approach to IRBM to the particular circumstances of the Sepik and Kikori, rather than to seek to apply a particular model from elsewhere. However, drawing on WWF's worldwide experience in IRBM programmes, it is envisaged that the IRBM approach will need to involve:

- building strategic partnerships with groups and institutions to catalyse the IRBM process at the national, catchment and local scales;

- development of a clear vision and agreement amongst stakeholders on the values to be conserved and sustainable livelihoods;
- developing and drawing on strong science-based catchment information
- sustained efforts to raise public awareness and to gain the support and participation of local communities, with a focus on links for sustainable livelihoods (especially poverty reduction);
- establishing IRBM as a political priority in provincial and national government
- work at the sub-catchment or landscape scale aimed at maintaining or restoring wetland values and ecological processes;
- establishment of protected area designations to provide a framework for effective management of outstanding biological assets and natural resources (e.g. Wildlife Management Areas and Ramsar sites);
- responding to extreme natural events or pollution incidents in a way that illustrates the importance of an integrated river basin approach
- application of local site or sub-catchment solutions to the river basin as a whole through establishing or enhancing river basin management organisations and programmes, laws and markets that promote conservation of river systems and sustainable development.

The choice of appropriate models for catchment management will also be informed by case studies that will support the UNDP-funded National Capacity Self Assessment (MEA) process being developed by the PNG Government with Australian Government support.

Protecting Freshwater Ecosystems

There are very few wetland protected areas in existence in PNG. There are 2 Ramsar sites of international importance listed (Lake Kutubu and Tonda) although management plans have yet to be developed. Wildlife Management Areas (WMAs) have been established in the TransFly region and the Middle Sepik. A number of wetlands have been identified as being significant in the national context for biodiversity conservation (see Appendix for wetland sites). These are listed as being of extremely high and high significance in the PNG Conservation Needs Assessment Report (DEC, 1993). More systematic and comprehensive wetland assessment work is needed to act as a basis for the development of a management strategy for protected area wetlands in the country. The first step would be the creation of a wetlands inventory through literature review and site visits. The means for monitoring and updating this inventory would also need to be established. In this context, it is considered that wetland inventory should provide a basis for collecting reliable knowledge and providing information for taking decisions concerning the conservation and wise use of wetlands (consistent with the Ramsar Convention framework for wetland inventory).

WWF and Wetlands International consider that there is considerable potential for the development of WMAs and Ramsar sites as effective tools for wetland conservation in PNG, working with the DEC. For both types of protected areas, there is likely to be considerable lead-in time to raise awareness of wetland values and to engage local communities that live in and around wetlands in a participative process to achieve co-management arrangements. Some consideration also needs to be given to the relationship between Ramsar sites and WMA designations. In line with recent guidelines of the Ramsar Convention on Wetlands, it may be appropriate to use Ramsar sites as a larger envelope, possibly including the whole sub-catchment, with WMAs more restricted to the

sites of highest biological importance and areas where use of natural resources requires managing. Local Marine Management Areas (LMMAs) are a further protected area model. These have so far been developed and implemented successfully by Wetlands International and WWF for some of PNG's coastal wetlands. The learning network approach that has been employed by LMMAs could be useful for sharing achievements and ideas for the conservation of inland wetlands.

Wise Use of Wetlands

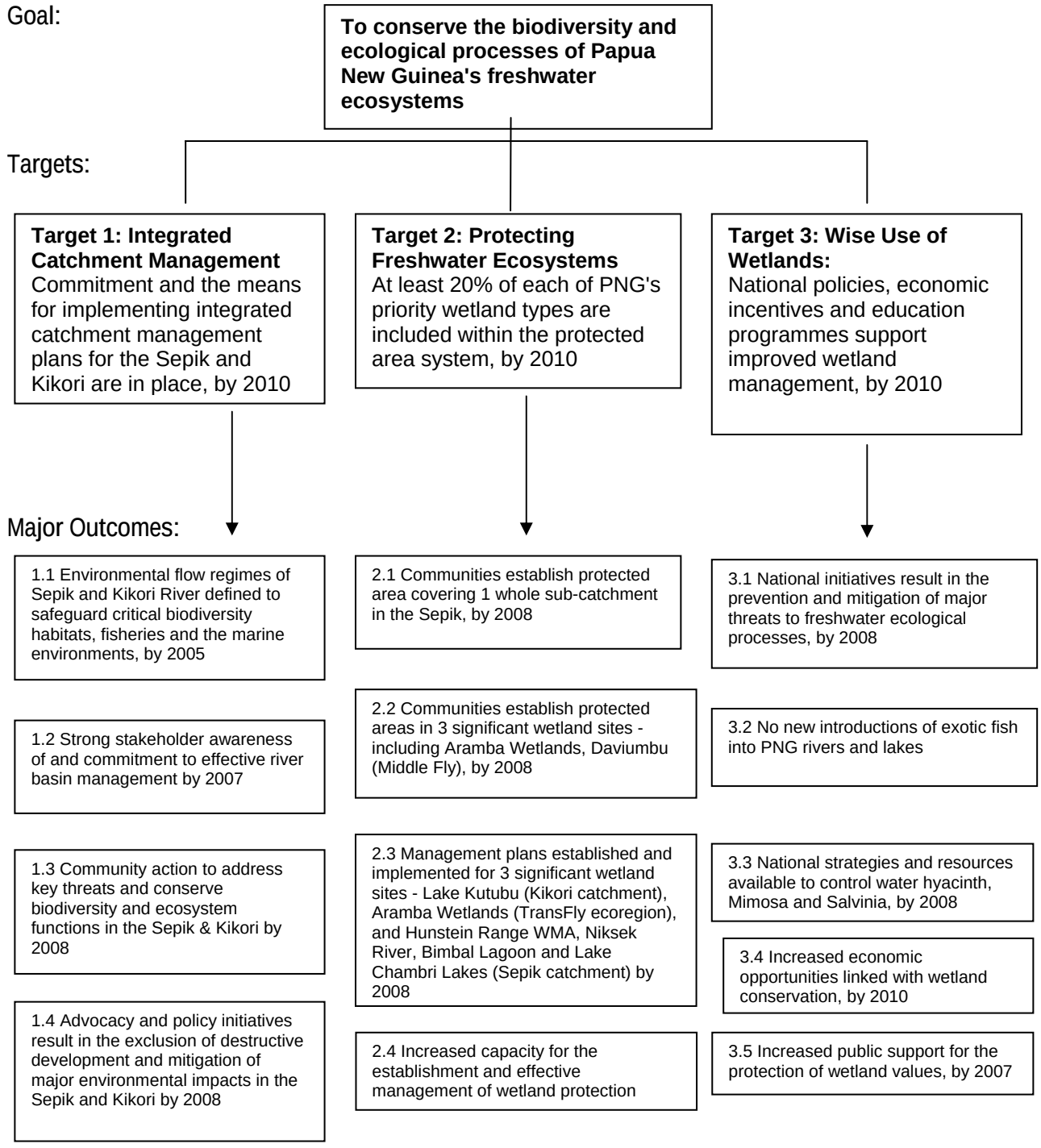
The global poverty reduction targets set in 2000 are to halve by 2015 the large number of people who lack access to adequate water supply and sanitation services. These commitments now drive the freshwater policy, aid and multi-lateral development bank programmes in developing countries worldwide. These governments have also agreed to prepare Integrated Water Resource Management and efficiency (IWRM) Plans by 2005 and to significantly reduce the rate of loss of biodiversity by 2010. To significantly influence the water policy and management programmes in PNG, and ensure that they help rather than hinder conservation, WWF will need to work at the international and national levels to show how wise use of wetlands and water resources can contribute to poverty reduction and sustainable development.

WWF will work to influence the key drivers of unsustainable use of freshwater resources and ecosystems, focusing on the major threats of large-scale infrastructure developments (such as mining and oil exploration), industrial scale logging and invasive species. There is a strong need for advocacy and capacity building at the national, provincial and whole catchment levels to address these major threats, and to ensure coordinated strategies for land and water use. It is proposed that WWF engages in advocacy and capacity building work with the Government (national and provincial) to promote the development of enabling frameworks, planning systems and policies for "wise use of wetlands". These activities are expected to lead to a number of significant conservation outcomes such as the adoption of policies for "no-go rivers for dams" and "no more riverine tailings in PNG". WWF will promote the values of the intact river floodplains as valuable, natural flood management systems. Awareness raising and advocacy work will also emphasise the potential socio-economic costs of triggering downstream impacts on fisheries through logging critical areas of the catchment or from the introduction of invasive species.

In parallel with this advocacy work, WWF will access specific technical expertise in order to assist local communities to develop small-scale business enterprises based on the sustainable use of natural resources. This will be carried out through participatory identification of natural resource potential in some of the significant wetland sites in selected parts of the TransFly and Sepik River catchments. Through awareness raising, capacity building and the development of sustainable Resource Development Plans, WWF and its partner organisations will advocate for increased service provision by Government and other stakeholders and empower local people to tackle external threats to their resources.

Programme Description

A 5-year programme has been developed with 3 Targets that will lead to 13 Major Outcomes. These are illustrated in the " Programme Tree" and Timeplan below:


Goal:
To conserve the biodiversity and ecological processes of Papua New Guinea's freshwater ecosystems
Targets:
Target 1: Integrated Catchment Management
Commitment and the means for implementing integrated catchment management plans for the Sepik and Kikori are in place, by 2010
Target 2: Protecting Freshwater Ecosystems
At least 20% of each of PNG's priority wetland types are included within the protected area system, by 2010
Target 3: Wise Use of Wetlands:
National policies, economic incentives and education programmes support improved wetland management, by 2010
Major Outcomes:
1.1 Environmental flow regimes of Sepik and Kikori River defined to safeguard critical biodiversity habitats, fisheries and the marine environments, by 2005
1.2 Strong stakeholder awareness of and commitment to effective river basin management by 2007
1.3 Community action to address key threats and conserve biodiversity and ecosystem functions in the Sepik & Kikori by 2008
1.4 Advocacy and policy initiatives result in the exclusion of destructive development and mitigation of major environmental impacts in the Sepik and Kikori by 2008
2.1 Communities establish protected area covering 1 whole sub-catchment in the Sepik, by 2008
2.2 Communities establish protected areas in 3 significant wetland sites - including Aramba Wetlands, Daviumbu (Middle Fly), by 2008
2.3 Management plans established and implemented for 3 significant wetland sites - Lake Kutubu (Kikori catchment), Aramba Wetlands (TransFly ecoregion), and Hunstein Range WMA, Niksek River, Bimbal Lagoon and Lake Chambri Lakes (Sepik catchment) by 2008
2.4 Increased capacity for the establishment and effective management of wetland protection
3.1 National initiatives result in the prevention and mitigation of major threats to freshwater ecological processes, by 2008
3.2 No new introductions of exotic fish into PNG rivers and lakes
3.3 National strategies and resources available to control water hyacinth, Mimosa and Salvinia, by 2008
3.4 Increased economic opportunities linked with wetland conservation, by 2010
3.5 Increased public support for the protection of wetland values, by 2007

Timeplan for Implementation of PNG Freshwater Programme, showing Key Milestones (linked to Major Outcomes)

Milestones	Year 1 (2004/5)	Year 2 (2005/6)	Year 3 (2006/7)	Year 4 (2007/8)	Year 5 (2008/8)
Program Coordination (All Targets)	Employment of Program Coordinator and Policy/Advocacy position Partnership agreements confirmed Operational Plan established for Program and linked to Forest and Marine Strategies and EAP Staff Recruitment for Sepik and Kikori Programmes completed and training initiated	Coordination and Program Management Staff training programmes on Integrated Catchment Management completed	Coordination and Program Management Mid-term review of Programme Plan and partnership agreements	Coordination and Program Management Appraisal of on-going funding and commitment of catchment management institutions and partners	Coordination and Program Management Program evaluation and documentation of lessons learnt from Integrated Catchment Management approach Review of partnership agreements
Integrated Catchment Management - Sepik Project (Target 1)	Staff engaged; partnerships established State of the Sepik document completed (1.2) Mechanism for operating Total Catchment Environment Management Policy defined (1.2)	Whole Basin Stakeholder Forum established (1.2) Values and threats assessment completed for one priority catchment (1.2)	Environmental Flow regime defined (1.4) Protected Area established and Ramsar listed in Middle Sepik (2.1) Community management plans completed to protect critical crocodile habitat (1.3)	Management Plan established in Middle Sepik (2.1) Long-term monitoring system for river flow and quality installed (1.4) Community-based projects to increase security of assess to safe drinking water (1.3)	Catchment Plan adopted by key stakeholders (1.2)
Integrated Catchment Management - Kikori Project (Target 1)	Additional staff engaged State of Kikori document	Whole Basin Stakeholder Forum established (1.2)	Environmental Flow regime defined (1.4)	Management Plan established for Lake Kutubu (2.3)	Catchment Plan adopted by key stakeholders (1.2)

Milestones	Year 1 (2004/5)	Year 2 (2005/6)	Year 3 (2006/7)	Year 4 (2007/8)	Year 5 (2008/8)
	completed (1.2) Monitoring database and baseline established	Values and threats assessment completed for one priority catchment (1.2)		Community-based projects to increase security of assess to safe drinking water (1.3)	
Protecting Freshwater Ecosystems (Target 2)	Wetland Inventory and Assessment completed (2.4)	Ramsar Shadow List adopted and priority sites for WWF action to develop PAs (2.4)	Protected Areas established in Aramba Wetlands and Daviumbu (Middle Fly) via TransFly EAP (2.2)	Management Plans established and implemented in Aramba Wetlands, and Hunstein Range WMAs (2.3)	Water, environment and conservation legislation ensures the protection of internationally and nationally important wetlands (2.4)
	Local NGOs and CBOs have improved capacity and resources for enabling communities to establish and manage wetland protected areas (2.4) DEC Wetlands Unit in PNG Government has improved capacity and resources for environmental assessment, community support and enforcement (2.4)				
Wise Use of Wetlands - Tackling Major Threats (Target 3)	Awareness activities on water hyacinth, Mimosa and Salvinia in TransFly and Sepik (3,3) Review of national strategies for tackling invasive species (3.3)	Review of alien fish introductions completed and recommendations adopted (3.2)	Announcement on no new riverine tailings disposal in PNG (3.1)	Logging excluded upstream of key wetlands (in the Sepik, Suki and Lake Murray) (3.1) Sepik and Kikori declared "No Dam" rivers (1.1) Mining and petroleum exploration excluded from high priority wetland protected areas and take full account of freshwater ecosystem values (1.1 and 3.1)	
Wise Use of Wetlands - increasing economic opportunities (Target 3)	Natural Resources project started in TransFly SWMI crocodile management project funded in upper Sepik	Increased capacity for Sepik River community tourism, including brochure production and distribution (3.4)	District development plans reflect integrated catchment management plan objectives in the Sepik, Kikori and TransFly (3.4)	Improved livelihoods through sustainable use of natural resources in the TransFly - water, Barramundi, crocodile skins, Saratoga fingerlings, tourism (3.4)	

Milestones	Year 1 (2004/5)	Year 2 (2005/6)	Year 3 (2006/7)	Year 4 (2007/8)	Year 5 (2008/8)
	Participatory assessment of economic development options and capacity building, TransFly	Capacity building and enterprise business development in TransFly (3.4)			

Resource Needs

The human and financial resource needs have been analysed and estimated for the first 3 years of the Programme. Taking into account the existing (and expected) funds and human resources linked to the Sepik, Kikori and TransFly projects, the main additional costs for developing the Programme are linked to the following functions:

- Programme coordination
- Policy analysis and advocacy
- Capacity building and training
- Research and analysis of existing data
- Legal advice
- Education, awareness raising and communications

From this initial analytical exercise, the minimum, total additional cost of Programme implementation (the expected gap in funding) is anticipated to be in the order of US$400,000 (1.2m Kina) over the first 3 years.

APPENDIX

Priority Wetlands in PNG

The names reflect those used in the PNG Conservation Needs Assessment Report (DEC, 1993) and the list includes those listed as either Highly Significant or Very Highly Significant Wetlands.

* denotes where WWF has worked/is working

Saline Brackish Swamps (mangroves)

Kikori Delta*
Aramia/Turama Delta
East Gulf Coastal Wetlands
Sepik Delta/Middle Ramu
Toriu Wetlands
Biges River
Sissano lagoon
Mambare Wetlands

Lowland Freshwater Swamps (swamp forests, grass swamps, savannah swamps with Melaleuca, Sago and Pandanas)

Middle Sepik*
Middle Fly and Murray Lake*
Sepik Delta/Middle Ramu
Lower Fly*
Ramu River
Brahman Mission
Kikori River*
Musa River
Aria Wetlands
Central Province Wetlands
Bougainville and South Coastal Wetlands
Tonda/Bulla Plain*

Lower Montane Zone (sedge and grass swamps, swamp forests)

Lake Tebera

Mid-Altitude Wetlands

Lakes Orim and Bune
Lake Kutubu*

Upper Montane Zone (herb swamps)

Sirunki Wetlands

Criteria for Determining Geographical Priorities for WWF's Freshwater Programme in PNG

Biological Criteria

1. Representation of priority freshwater habitat types and faunal biogeographic regions
2. Habitat and species richness
3. Degree of endemism/ no. of endemic species
4. Presence of relectual species
5. Distinctiveness/uniqueness
6. Presence of adjacent marine and terrestrial priority sites that have ecological links to freshwater ones

Conservation Status

7. Area
8. Degree of protection
9. Ecological resilience
10. Degree of fragmentation

Degree of Threat

11. Existing and planned major developments:

- Mining - clearing, infrastructure, toxic pollution, sedimentation, change in river morphology (also smaller-scale alluvial mining)
- Industrial plantations -clearing, infrastructure, sedimentation, pollution
- Logging - clearing, infrastructure, sedimentation
- Oil and gas - clearing, infrastructure, pollution threat
- Commercial (larger scale) and subsistence agriculture (smaller scale)

12. Invasive aquatic species
13. Water extraction for town usage
14. Climate change (affecting environmental flows, wetland area etc)
15. Water quality impacts linked to human settlements

Feasibility

16. Where WWF is present already
17. Where WWF has been invited to work
18. Where other environmental organisations are present
19. Where there is potential for other local organisations to continue work for the long term
20. Where there is likelihood WWF will be successful
21. Where a whole catchment approach or Ecoregion Conservation approach can be taken to address a number of conservation priorities

Table 1 Showing broad-brush assessment of PNG's major catchments in terms of biological value, threats and the feasibility of WWF achieving significant conservation gains

	TYPE, EXTENT and POPULATION	BIOLOGICAL VALUES Including no. of "Important Areas" identified in the PNG Conservation Needs Assessment (DEC, 1993)	THREATS Including perceived existing and potential threats to freshwater biodiversity	FEASIBILITY FOR WWF Including WWF presence, partner and other NGO presence, the potential to avert major threats and presence of Protected Areas
1. SEPIK	One of the largest unpolluted rivers in New Guinea and Asia-Pacific. Longest river in PNG with catchment of 78,000km^2; discharge 4,500 - 11,000 m^{3}sec^{-1}; Freshwater plume extends up to 35km out to sea. Large floodplain with lake systems . One of the least developed regions; communities rely almost entirely on the environment for subsistence resources	FW 2 Endemic Bird Area (EBA) Marine 1 ?2 centres plant endemism Terrestrial 3 High fish endemism Total 6 Primary crocodile habitat Intact and largely unpolluted **Medium**	Proposed logging s. scale mining (alluvial) 2 proposed mines Climate change (salinisation threat) Agricultural clearance for Vanilla Water hyacinth + Salvinia invasions Introduced fish species Human waste **Medium**	Programme exists Partners exist Integrated Catchment Management agreement with DEC to work here Potential to avert major threats Major Protected Areas exist **High**
2. RAMU	720km long river with relatively small catchment; floodplain interconnected with the Sepik	FW 2 2 centres plant endemism Marine 1 2 EBAs Terrestrial 2 High fish endemism Total 5 Shares no. of fish endemics with Sepik **Medium**	Mine (Ni). likely Agriculture - industrial (palm, sugar, oil) Logging (mostly proposed) **Medium**	No WWF presence BRG + FPCD presence, most threats are only proposed, but mine likely to have significant impact Proposed Protected Areas **Low**
3. PURARI	Catchment of 33,670km^2 and discharge of 2667 m^{3}sec^{-1} into an extensive delta in the Gulf of Papua One of the least developed regions; communities rely almost entirely on the environment for subsistence resources	FW 1 1 EBA Marine 1 Terrestrial 2 Total 4 **Medium**	Extensive lowland logging Proposed highland logging Proposed Indus aq (oil palm) Proposed mine high population pressure Oil exploration Hydro-electric power potential **High**	No WWF presence RCF + WCS in upper major threats Big Protected Area exists **Low**

	TYPE, EXTENT and POPULATION	BIOLOGICAL VALUES Including no. of "Important Areas" identified in the PNG Conservation Needs Assessment (DEC, 1993)	THREATS Including perceived existing and potential threats to freshwater biodiversity	FEASIBILITY FOR WWF Including WWF presence, partner and other NGO presence, the potential to avert major threats and presence of Protected Areas
4. FLY-STRICKLAND	Fly River is 1200km long but has the largest discharge of any PNG river (mean: 6000m^3sec^{-1}). Tidal for 240km upstream; the middle Fly floodplain is 15 to 20km wide with extensive meandering. One of poorest and least developed parts of PNG	FW 2 3 centres plant endemism Marine 1 1 EBA Tererestrial 3 Total 6 Highest fish diversity and endemism Significant crocodile habitat Shares 33 fish species with northern Australia **High**	Mining: pollution, sedimentation, heavy metals Some existing and proposed logging Road infrastructure Invasive species **High**	WWF present in part (TransFly) but not in a position to address threats. Awareness activities re invasive species. Protected Area work. Includes a proposed Protected Area **Low**
5. KIKORI		FW 2 1 Ramsar Marine 1 2 c. plants Terrestrial 4 2? EBA Total 7 Shorebird Network Site Lake Kutubu has 11 species of endemic fish **Medium**	Oil extraction – pollution threat Existing logging Invasive species – fish Road infrastructure Population pressure in highlands **Medium**	WWF presence and programme CD1 presence + history Project boundary is catchment Oil consortium partner No partners re logging Protected Area exists **Medium**
6. TRANSFLY	Trans-boundary system, bordered by the Fly and the Digul Rivers, this is a massive wetland/forest/grassland complex One of the least developed regions of the country with some of the poorest communities - a strong reliance on natural resources for subsistence living	FW 1 1 Ramsar (High bird endemism) Marine 1 1-2? c. plants Terrestrial 1 1 EBA Total 3 Shorebird Network Site Over 10,000km2 designated as a Ramsar site **High**	Invasive species Proposed logging Water extraction – environment flows Road devt. Climate change **Medium**	WWF presence + history at whole ER level; addressing range of values + threats Major PA (50% will be – 3 WMAs) **High**
7. ARAMIA-TURAMA		FW 1 1 EBA Marine 1 1 centre of plant endemism Terrestrial 2 Total 4 **Medium**	Existing + proposed major logging Population pressure localised. Road development **High**	Past WWF presence re Kikori end and TransFly programme Major logging threat WWF project proposal exists to address this Small Protected Area exists **Medium**

Table 2 Collaboration Matrix

Collaborating Organisation	*Contact Persons*	*Objective(s) of collaboration*	*Type*	*Priority*	*Status*	*Strategy/Expertise*
Ambunti District Local Environment Foundation	Betty Wabi, Jacob Kwaramb	▪ *Strengthening of a local NGO to support conservation and community development in the Upper Sepik*	NGO	High	Fair	▪ Funds for patrols and activities ▪ Capacity building to develop management capability ▪ Participate in joint activities ▪ Field based training
Department of Environment and Conservation	Barnabas Wilmott, Janes Sabi	▪ *Establish, strengthen and promote wetland protected areas* ▪ *Establish a capability in implementation of a catchment management policy*	Government	High	Excellent	▪ Strengthen wetlands unit ▪ Jointly review options for implementing catchment policy ▪ Involvement of staff in field activities ▪ Complete wetlands assessment and register
Environment Australia	Andrew Taplin,	▪ *Strengthen environmental legislation, policy and implementation capability*	Donor / Technical advisor	High	Good	▪ Policy advise ▪ DEC staff training
Sepik Wetlands Management Initiative	Wilson Lambi, Benny Gowep	▪ *Protection of crocodile habitat in upper Sepik* ▪ *Promotion of sustainable crocodile harvest industry*	NGO	High	Medium	▪ Clarify working relationship with ADLEF and Ambunti District government ▪ Undertake joint activities
Wetlands International	Jane Madgwick, Doug Watkins, Aaron Jenkins	▪ *Assessments and monitoring of wetland values* ▪ *DEC and NGO capacity building*	NGO	High	Good	▪ Clarify areas of mutual interest ▪ Identify a common strategy for working with DEC
WMA Landowners, Suki. Liembai, Tonda, Lembana, Hunstein, Lake Kutubu, Oriomo	WMA Committee members	▪ *Develop sustainable management regimes for their WMAs/CA* ▪ *Develop management capacity*	CBO	High	Excellent to poor	▪ Joint planning ▪ Capacity Building & Training ▪ Funding/local knowledge and skills
Ambunti Lodge	Alois Mateos	▪ *Support to community and nature tourism activities*	Corporate	Medium	Good	▪ Marketing of village tourism ▪ Training of guides
Bau Bau Theatre Group	Lucas Kou	▪ *Information campaigns on Sepik River*	NGO	Medium	Good	▪ Information distribution in the Sepik through theatre
Bensbach Lodge	Brian Bromley	▪ *Support to community and nature tourism activities*	Corporate	Medium	Fair	▪ Marketing of village tourism ▪ Training of guides
Community Development Initiative (CDI)	Sisa Kini	▪ *Provision of development services*	NGO/ Corporate	Medium	Excellent	▪ Development services provision
HELP Resources	Robert Lafanama, Elisabeth Cox	▪ *Local NGO training and support* ▪ *Information campaigns on Sepik River*	NGO	Medium	Good	▪ Use as a support agency to Ambunti NGOs ▪ Information materials production and distribution
OilSearch	John Brooksbank, Laurie Bragge	▪ *Policy and funding support to catchment protection* ▪ *Exclusion of prospecting in key areas*	Corporate	Medium	Excellent	▪ Maintain relationship

Collaborating Organisation	*Contact Persons*	*Objective(s) of collaboration*	*Type*	*Priority*	*Status*	*Strategy/Expertise*
"Kamiali Group" – VDT, RCF, CI, TNC, DEC, PwM, FPCD, WWF	John Sengo, Robert Bino, Warren Jano,	▪ *Knowledge exchange in protected areas establishment and management*	NGO	Low	Good	▪ Strengthening Partnership ▪ Increase coverage of areas under PA ▪ Skills transfer ▪ Stakeholder influence
Legal NGOs - CELCOR, ELC, Alotau Environment Ltd (AEL), Greenpeace)	Damien Ase, Annie Kajir, Effrey Dedemo, Brian Brunton	▪ *Legal assistance to communities on environmental threats* ▪ *Lobbying on forest policies*	NGO	Low	Fair	▪ Assistance to communities in dealing with illegal and damaging development activities
National Fisheries Authority		▪ *Sustainable management of inland and marine fisheries*	Government	Low	Good	▪ Participate in exotic species survey and controls
New Guinea Environment Watch Group (NEWG) and Mineral Policy Institute	Matilda Koma, Igor O'Neill	▪ *Lobbying on mining policies*	NGO	Low	Fair	▪ Assessment of mining impacts ▪ Lobbying on mining investments for proposed mines
PNG Eco-Forestry Forum	Kenn Mondiai	▪ *Lobbying on forest management issues*	NGO	Low	Good	▪ WWF PNG to have a representative on PNG EFF board ▪ Work collaboratively on forestry reforms
PNG Forest Authority	Dike Kari (HQ), Terry Warra (PNGFI)	▪ *Effective management of forest resources* ▪ *Trans-boundary Program*	Government	Low	Fair	▪ Joint planning ▪ Campaign / advocacy

Attachment D – Trip Plan to Sepik, Ted Mamu

Field trip to Sepik – 22-28 October

- ♦ identify and establish contact with local communities and other partners and strengthen collaboration
- HELP Resources/Wewak (Robert Lafanama, Elisabeth Cox)
- ESLEF/Wewak
- ESCOW/Wewak
- SCF/Wewak
- PIM/Ambunti
- ADELF/Ambunti (Jacob Kwaramb, Betty Wabi)
- Hunstein WMA Committee (if possible due to past historic grievances) and visit Wagu and Yigei villages (travel to Gahom village if time permits)
- DAL/Wewak
- DAL/Ambunti

- ♦ Talk to local communities where appropriate and if necessary about the IRBM – provide brief background and obtain feedback from people
- Visit communities (Bitara, Kaigiru and Pukapuki villages) along April River (Niksek River) – proposed Uma, Mea'ha and Pukapuki protected areas
- Visit Yerakai and Garambu villages – new proposed Andep WMA

- ♦ identify occurrence of the invasive alien species (fish, salvinia weeds, water hyacinth, etc)

Literature search (in-house) – 30-31 October 2004
- review Darwin Initiative proposal and PNG FW strategy and develop draft workplans for Sepik River Basin
- prepare plans for a meeting with Leo/Ruby/Dan/Paul/Lisette
- complete report of Sepik trip and submit to Dan

Outputs from Sepik Trip:
- Establish and strengthen collaboration network with partners.
- Develop better understanding among appropriate and relevant partners who has strong convictions to assist WWF with the IRBM work in the Sepik River Basin. (This could also lead to establishing longer collaborative partnership with a signed MOU, for instance)
- Write a report of the reconnaissance trip for the Donor

Next Steps: (after meeting with Dan, Max, Paul, and Michael – 20 October 2004)

Action Plan	**Person Responsible**	**End Date**
• Prepare a draft workplan of Sepik freshwater by end of 2004	TM	End of December 2004
• Circulate an email to other relevant staff about the notion to establish a steering committee/ advisory committee – which should comprise local NGO's, LLG's, provincial governments, and other partners and individuals to oversee the work of the Sepik IRBM.	TM	Mid-November 2004
• Arrange a date to meet with Leo, Ruby, Paul, Dan, and Lisette to develop FW planning strategy for Sepik River Basin	TM	End of October 2004

Abbreviations:

ADLEF	*Ambunti District Local Environment Foundation (NGO)*
DAL	*PNG Department of Agriculture and Livestock*
EIA	*Environment Impact Assessment*
ESCOW	*East Sepik Council of Women (NGO)*
ESLEF	*East Sepik Local Environment Foundation (NGO)*
FW	*Freshwater*
LLG	*Local Level Government*
PIM	*Pacific Island Ministry*
SCF	*Save the Children's Fund*
DM	*Dan McCall*
PC	*Paul Chatterton*
MK	*Max Kuduk*
TM	*Ted Mamu*