Sustainable Development in PNG

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(David Mowbray has taught courses on sustainable development under various names since 1992 both at UPNG and the Australian National University. He was chairman of the 1993 20th Waigani Seminar on Environment and Development held throughout PNG that year and was a member of PNG government committee that establish the framework for initial sustainable development strategy.)

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What is the history of sustainable development in PNG

Summary

At independence, PNG's founding fathers had the foresight to enshrine environmental and sustainability concerns into the national constitution. The five National Goals and Directive Principles of PNG's constitution reflect a commitment to sustainable development and PNG ways.

Following the 1992 World Summit on Environment and Development (at Rio) PNG developed its own National Sustainable Development Strategy in two documents called Stretim Nau Bilong Tumora and Yumi Wankain. It was PNG's 'Agenda 21' and a reaffirmation of our national constitution. It was our commitment to ecologically sustainable development (ESD). ES assisted this process by co-ordinating the 1993 Waigani Seminar on the theme, from Rio to Rai: Environment and Development in PNG.

Over the next decade much of this seemed to be largely forgotten. However key publications included 1998 PNG Human Development Report, the 1999 PNG Population Policy and in 2005 our PNG Millennium Development Goals and in 2014 the updated and revised PNG Human Development Report.

The presentation then looks at some important mistakes PNG has made and concludes with a list of lessons unlearned and a list of lessons learned both for PNG.

Vision 2050 was published setting out the road map for what was termed a visionary development strategy to guide our socioeconomic development ‘We will be a Smart, Wise, Fair, Healthy and Happy Society by 2050.’ It was an aspirational statement and a vision for our future.

PNG's Sustainable Development Strategy
In March 2014 the Minister for National Planning and Monitoring Mr Charles Abel presented a new 'development revolution' for PNG. He proposed the new National Strategy for Responsible Sustainable Development. (You have a copy of this both electronically and in book form / provided). In fact it is a resurrection of an earlier PNG National Sustainable Development Strategy that was accepted by NEC back in 1994 but long since forgotten. Moreover this is a greatly improved strategy with firm PNG Government support (Abel, 2014a,b and Department of Planning and Monitoring, 2014a). See Box 2 which summarises some of Minister Charles Abel's points given in a PowerPoint presentation.

**Evolution (or history) of PNG's Sustainable Development Strategy**

This section deals with the evolution or history of a National Strategy for Sustainable Development in PNG.

At independence, Papua New Guinea's founding fathers had the foresight to enshrine environmental and sustainability concerns in the national constitution. The five National Goals and Directive Principles of Papua New Guinea's constitution reflect a commitment to sustainable development. The fourth is about natural resources and environment, as set out in Box 1:

**Box 1. The fourth national goal and directive principle is about natural resources and environment,**

*Papua New Guinea's natural resources and environment should be conserved and used for the collective benefit of all and should be replenished for future generations, We accordingly call for:*

1. **wise use to be made of our natural resources and the environment in and on the land or seabed, in the sea, under the land, and in the air, in the interests of our development and in trust for future generations;**

2. **the conservation and replenishment, for the benefit of ourselves and posterity, of the environment and its sacred, scenic and historic qualities; and**

3. **all necessary steps to be taken to give adequate protection to all our valued birds, animals, fish, insects, plants and trees.**

The fifth National Goal (Papua New Guinea Ways) also emphasized the need to use Papua New Guinean ways or organizational forms, and public participation was stressed in the second National Goal (Equality and Participation). The first National Goal is about Integral Human Development. These concepts were to be embodied in decision-making. Perhaps we still need to implement these goals.
NG leading the Way – A Development Revolution. The new Paradigm – the new way.

National Strategy for Responsible Sustainable Development for Papua New Guinea

From Hon Charles Abel, Minister for National Planning and Monitoring, in Alotau, power point presentation, March 2014.

PNG leading the Way – A Development Revolution. How can we bring a smarter approach to development that clearly responds to our Constitutional Guiding Goals and Directive Principles?

These values are at the heart of our Constitution as captured in our National Goals and Directive Principles:

- Integral Human Development
- Equality and Participation by all
- Enhancement of National Sovereignty and Self-Reliance
- Responsible Management and Use of our Natural Resources. For Environment and Sustainable Assets
- PNG Ways

Why change?

- copycat
- corruption
- poverty
- conflict and violence
- environmental destruction
- inequality
- overpopulation

What is needed?

- Leadership and good governance
- shared responsibility
- peace and harmony
- environmental protection
- equality
- stable population

We can be leaders not followers... we are in an unique position to choose a future that is responsible and sustainable in a changing world – world leaders in responsible development.

PNG’s first National Strategy for Sustainable Development was launched after the 20th Waigani Seminar on “From Rio to Rai: Environment and Development in PNG”. It was called “Stretim Nau Bilong Tumora (ES UPNG and Policy Co-ordination and Monitoring Unit 1993) and was supported by the action plan entitled “Yumi Wankain” (PM's Department and UNDP 1994). This conference was held a year after the Rio Conference, as PNG’s response to the challenges from Rio. It was held both at the university in Port Moresby and also at a number of regional centres, including in the following provinces: Eastern Highlands (Goroka University), Western Highlands (Mount Hagen), West Sepik (Vanimo), Manus (Lorengau), Madang (Madang), Morobe (UOT, Lae), East New Britain (Malaguna), Bougainville (Hutjena), and Western Province.(both Kiunga and Daru). Representatives from the following provinces also presented papers: Simbu, East Sepik, New
Ireland and West New Britain, The philosophy behind this Waigani seminar was that in PNG any strategy for sustainable development requires the participation of grass roots people and those from the provinces and villages. Hence it was held also outside Port Moresby. (See Darren Gladman, David Mowbray and John Duguman 2006). volume 1 “From hearts and minds”. This would ensure From Rio to Rai!! (See Darren Gladman, David Mowbray and John Duguman 2006). volume 6 “From Rio to Rai to Reality”.


(A copy of the full set is available for K20 for ESG students from Jason Alonk Room 608 TB6).

These developments are outlined in various documents: Stretim Nau Bilong Tumora (Department of Environmental Science University of Papua New Guinea and Policy Co-ordination and Monitoring Committee of Department of the Prime Minister and NEC, 1993); Yumi Wankain (United Nations Development Programme (UNDP), 1994) and Mowbray and Duguman (2004/2009). At the same time a group of PNG NGOs published their own set of guiding principles outlined in their “The Papua New Guinea Mama Graun Tribal Charter”. (PNG NGO Environment Watch Group, 1992).

This commitment to sustainable development was reiterated when Papua New Guinea's National Executive Council (NEC) endorsed the National Sustainable Development Strategy in 1994. The National Sustainable Development Strategy was a programme of comprehensive capacity building and support for resource and environmental planning, development and management. It was Papua New Guinea's 'Agenda 21', our response to the commitments given by the government at the Rio Earth Summit in 1992 and a reaffirmation of the Five Goals and Directive Principles of the National Constitution. It was our commitment to sustainable development (ESD), the creation of a process for "an ecologically and economically sustainable, socially equitable society" (Diesendorf and Hamilton, 1997).

For PNG, the Sustainable Development Strategy has waned through the years. The activities and recommendations generated by both Rio and by the 1993 Waigani Seminar then seemed to have been largely forgotten, or at least given very low priority, though hopefully this is now changing. The National Sustainable Development Strategy became caught up in a number of ministerial and departmental reshuffles, ending in the Department of National Planning and Implementation. It is
only in 2014 that it has now been resurrected (albeit in a better proposal), culminating into the PNG government policy on Responsible Sustainable Development (RSD) by Minister Charles Abel (See Box 1 and Abel 2014a,b; also see Department of National Planning and Monitoring, 2014a). More on this later.

Some of the outcomes from this first National Sustainable Development Strategy are reflected in the


(3) In 2000 Papua New Guinea also committed itself to the United Nations Millennium Development Goals (UN 2000, UNDP 2003) and published its own PNG Millennium Development Goals (Government of Papua New Guinea and United Nations in Papua New Guinea, 2005). This was updated in 2010 with the second version of the PNG Millennium Development Goals in the national progress comprehensive report (Government of PNG and UN in PNG, 2010).

(4) (Other important government reports are included in reference list and some provided to you as pdf files)

Through 2005–2006 various workshops were held in Papua New Guinea involving government departments and including other Pacific nations on 'mainstreaming environment into development planning' (Saulei personal communication, 2005; Banga personal communication, 2006). In January 2006, through funding from the Global Environment Facility (GEF), the Papua New Guinea government, working with Columbia University and local Papua New Guinea stakeholders/participants, initiated a strategy to implement Goal 7 of the Millennium Development Goals — 'ensure environmental sustainability' (Melnick et al. 2005). Both DEC and UNDP regarded this as a high priority and had initiated activities in both waste management (DEC, Joku personal communication 2006) and in broadening the parameters to be considered (UNDP, Bade personal communication 2006).

Through this period a number of important regional reports were also published. These included 'The Pacific Way' (SPREP, 1992) and associated report Environment and Development. A Pacific Island Perspective (ADB, 1992); also the 'Pacific Plan' (Pacific Island Secretariat, 2005) and the very recent 'Framework for Pacific Regionalism' (The Pacific Plan Review and the Forum Secretariat, 2014). PNG is a partner in all these.

PNG Problems and Blocks on Sustainable Development

Despite a commitment to sustainable development, over the years PNG has made many mistakes by doing things inconsistent with that commitment to sustainable development. We continue to exploit our natural resource base unsustainably, especially in mining, petroleum and forestry, and use the income generated on questionable development activities which often ignore equity issues and the poverty of many of our people and the decline in services, both rural and urban. The commitment to 'equity' and 'economic and social justice' is often ignored. Despite a commitment today to free health and education, it just is not happening. Schools in some places are becoming over-crowded and the school buildings and health centres are literally falling down. Also environmental concerns are brushed aside in this rush for development. Today we see massive development in Port Moresby but little in most other parts of the country where health services and schools are extremely run down. In Gulf Province health services are scarce in most parts of the
province being remote for most people. No PNGian doctors want to work in isolated places like Kikori and Kapuna (with a few exceptions). This is common throughout the country. In Daru, the capital of Western Province home to the giant Ok Tedi Mine and of PNG Sustainable Development Limited, there is limited basic infrastructure and people still use black buckets or black pans for their toilet. In many of the very remote villages in PNG the people rarely if ever see Government officers or receive any services. Schools and health centres are remote and often very run down and with limited if any supplies. What do the rest of the people in Papua New Guinea think when they see or read about or are told about what is happening in Port Moresby (massive development of roads, buildings, sports facilities, infrastructure, good hospitals and excellent schools) and yet see little improvements in their own areas? Something indeed is very wrong. This is a matter of social / intragenerational equity! If PNG is committed to sustainable development why is this happening or not happening??

I shall now discuss four areas of particular concern, all showing a lack of commitment to sustainable development: (1) legislation introduced to fast track development, (2) DEC's withdrawal from maintaining protected areas, (3) SABLs and their continuation, (4) weak commitment to chemical management.

1. Fast-Tracking Development

The old paradigm of brown development seems to still be the norm. Attitudes and values and lack of political will to enforce environmental protection still exist. Development projects are fast-tracked, avoiding enforcing environmental legislation. This occurs from political pressures since the country continues to rely on non-renewable resources (but are their benefits being sustained?). For example, in 2010 retrograde legislation was passed by the Somare Government which gave extraordinary powers to the Secretary of Environment and Conservation to over-ride environmental legislation and took away the right of appeal by communities. It is suggested by Shearman (2013) and others (personal communication) that this amendment was at the bequest of a large mining company, who disposes its waste directly into the sea. See Box 3.

Thankfully in 2014 these amendments to the Environment Act were revoked by the O'Neill Government. This sorry saga is a clear example of the government betraying its commitment to sustainable development. Environmental protection is a crucial part of implementing sustainable development. It must not happen again.

2. DEC's withdrawal from supporting Conservation and Protected Areas.

In another area, since the early 1990s DEC (now CEPA= Conservation and Environmental Protection Authority) had basically ceased supporting protected areas (PA's) throughout the country with a few exceptions. This and other sad stories of the weaknesses of DEC are outlined in Shearman (2013). Most protected areas now exist on paper but not in practice. Few DEC staff are in the field supporting protected areas and provide basically no support to landowners and local communities. Most national parks, wildlife management areas and other protected area receive no financial or staff support, except for some from either PNGian or international conservation NGOs. Likewise for marine conservation or protected areas.

This hopefully is now changing with JICA assistance as PNG DEC has recently committed itself to re-establishing and strengthening protected areas (reported in Post Courier and National, in October 2014 and recently in March 2015) with the example of Varirata National Park. Other strong protected areas are the Yus Conservation Area and the Exxon-Mobile supported Lake...
Kutubu WMA. This recommitment to biodiversity conservation and protected area management and new partnerships in conservation were clearly stated by the DEC presenter at this workshop (presented in MLT at UPNG on Thursday 20th November 2014) This will be a key policy area for the new 2015 Conservation and Environmental Protection Authority. **Biodiversity conservation and an effective protected area management system are crucial parts of a sustainable development strategy.**
Introduction

Overview of Environment Act 2000

The Environment Act 2000 (Act) is the primary legislation in PNG which regulates the environmental impact of development activities and how any adverse effects of such activities should be avoided, remedied or mitigated. Under the Act, developers must apply to the PNG Department of Environment and Conservation (DEC) for an authorisation to undertake activities which materially impact the environment. The type of authorisation required depends on the nature of the proposed activities and the level of impact involved. The Act imposes hefty fines for developers who undertake activities without an appropriate authorisation. Broadly speaking, certain activities (prescribed by the Act as ‘level 3 activities’) require the developer to undertake an environmental impact study (EIS), to be made available by the DEC for public review and comment, before a decision is made as to whether an authorisation should be granted. An EIS is required for ‘level 3 activities’ such as the submarine disposal of tailings waste from mine operations and the recovery, processing, storage and transportation of oil and gas.

Repeal of Environment (Amendment) Act 2010

The Act was amended in 2010 by way of the Environment (Amendment) Act 2010 (2010 Amendment) to allow retrospective certification and authorization of activities which may have otherwise been deemed illegal under the Act.

Pursuant to the 2010 Amendment, the Director of the DEC was granted power to:

- retrospectively certify and authorise any activity by a developer which relates to or is associated with an activity permitted by an existing authorisation, notwithstanding non-compliance with any procedural requirements of the Act;
- certify and exempt any act, work or omission undertaken by a developer which was not in accordance with an existing authorisation;
- on application by a developer, certify that a particular methodology or conduct undertaken, or proposed to be undertaken, by the developer meets the best practice standards required by an existing authorisation;
- certify and authorise an activity as being a necessary and inevitable consequence of any conduct that is permitted by an existing authorisation; and
- certify an act, work or activity as being in compliance with an existing authorisation.

Generally, the grant of a certificate by the Director in the above circumstances would:

- constitute conclusive evidence that the relevant activity is authorised and therefore lawful;
- be final and not subject to challenge or review in any court, except by the holder of the relevant authorisation (i.e. the developer); and
- constitute a bar to any claim in tort or other civil cause of action brought as a result of the activities the subject of a certificate.

In January 2012, the above amendments were proposed to be repealed in their entirety by Parliament pursuant to a bill tabled by the O'Neill Government. It is understood that upon certification by the Speaker of Parliament, the new law will come into force immediately and will have retrospective effect.

Potential legal implications

The new law could impact the resources sector in a number of ways depending on the specific circumstances. Below are some examples of possible legal implications:
(continued) Potential legal implications

The new law could impact the resources sector in a number of ways depending on the specific circumstances. Below are some examples of possible legal implications:

- Developers could be faced with higher compliance costs for their projects – i.e. costs to ensure that their projects meet the requirements of the Act by holding the required authorisations.
- Projects which were modelled on the (now repealed) 2010 Amendment to the Act may need to be re-modelled as a result of the new law.
- Material delays to project schedules may be encountered by the need to obtain new authorisations under the Act and to satisfy the applicable requirements for such processes. This could particularly arise where an EIS is required for a current or proposed ‘level 3 activity’ that had previously been certified.
- Activities which had been certified by the Director could now be unlawful, thereby exposing developers to prosecution under the Act. Additionally, a past decision by the Director to grant a certificate could now be subject to legal challenge by aggrieved third parties.
- Developers could now be materially exposed to civil claims for damages (including in tort) by third parties affected by any activities that had previously been certified by the Director.

Conclusion

Developers who received certification from the Director pursuant to the 2010 Amendment should seek legal advice on the extent to which their business is impacted by the new law, and how and to what extent they can avoid or mitigate such impact. This may be particularly critical for projects in the mining, oil and gas and other sectors which regularly undertake ‘level 3 activities’.

The content of this article is intended to provide a general guide to the subject matter. Specialist advice should be sought about your specific circumstances.

3. Special Agricultural and Business Leases (SABLs)

Special Agricultural and Business Leases (SABLs) were established a few years back and although found to be “corrupted” and avoiding important environmental, forestry and agricultural legislation are still operating although the Prime Minister almost 18 months ago promised to rescind them or most of them immediately. No action has been taken to date to suspend them though the Prime Minister still insists today that they must be revoked. Much has been written on this in the PNG press and in particular on the PNG blog png exposed blog (Peter O'Neill's illegal logging 508 days and counting, on 15th November 2014 on www.pngexposed.wordpress.com). A summary of the final SABL report is given on www.pang.org.fj/summary-of-the-final-sabl-report-png/. See also www.en.wikipedia.org/wiki/Deforestation_in_Papua_New_Guinea. In this last report it covers PNG Government turning forest assets into carbon trading revenue through the REDD programme. The SABL “sorry story” is a dramatic example of a government going against its policy of sustainable development as nothing is more unsustainable than logging and SABLs in PNG’s forests!! (also see Phil Shearman et al, 2008). SABL’s must be immediately revoked and sustainable forestry and agricultural practices invoked.
4. Weak commitment to chemical management aspect of environmental protection.

The author, with over 30 years of working with DEC (from 1978 to 2008, 2014) has never seen a prosecution for infringement to the Environmental Planning Act, Environmental Contaminants Act now amalgamated (with the Water Resources Act) into as the Environmental Act 2000. This has been confirmed to me by colleagues both in DEC and by colleagues at UPNG who used to work in DEC. Furthermore DEC has never since when the Environmental Contaminants Act was passed in 1978 (replaced by Environment Act in 2000) made a prosecution for environmental pollution. The possible exception was when the PNG Government closed the Ok Tedi Mine down in the early 1980s due to its disposal of tailings into the Fly River but this was only temporary and never resulted in any prosecutions. Landowners have sued BHP and Ok Tedi in Australian courts for polluting the Fly River. I have been told of other possible prosecutions for environmental pollution but these never eventuated. These included a large mining company and smaller industries. I have also heard quite a number of times over the year of decisions being made at a political level before DEC can investigate or during the investigation and review time.

DEC has failed to mitigate, control or regulate adequately industries both large and small relying too often on self regulation which only works when you have socially responsible companies. Some large international companies like Exxon Mobil produce quarterly social and environmental reports (eg the latest one available on the web is the second quarterly report for 2014 at www.pnglng.com/images/environmental_pdfs/Q2_2014_ES_Report_Final_Full.pdf). Others like Placer / Barrick produce annual sustainability / responsibility reports (latest available on the web at www.barrick.responsibility.com go to environment and social impact assessment at www.barrickresponsibility.com/additional information/environment/environment-and-social-impact-assessment/). PNG Power is proactive in dealing with old transformers and PCB wastes (see Ben Tolimanaram, 2005). New Britain Palm Oil also produces sustainability reports covering both social and environmental aspects, available at www.nbpol.com.pg New Britain Palm Oil, 2011).

A bad example of environmental contamination and a real risk to the community is the many old timber treatment plants around the country. Many of these sites have been abandoned, few if any remediated. An example from Port Moresby is the Forestry Department former treatment plant at Hohola. Forestry is reprehensible in how it dealt with a contaminated site in this old timber treatment plant in the Port Moresby suburb of Hohola. For years (in the 1980s through to the early 2000’s) overflow from this plant flowed into a creek where people picked kangkong and where children played. It contained copper-chrome-arsenic and was almost fluorescent blue-green. The waste from the sedimentation pit was thrown onto the ground beside it and beside food gardens. People lived in the same building as the treatment plant (the other half!). Forestry sold the site without any remediation work. It now is the site of new housing estate. In Australia where the same thing happened the houses had to be abandoned twenty years later because of persons living there being poisoned. Forestry was advised to clean the site or fence it off, but never did!

Many companies particularly smaller ones, and in particular the workers often do not know what chemicals they are using or call 'confidentiality' as they regard what they use a trade secret. The new regulations and guidelines on chemicals will change all this!!. Chemicals legislation to date has only controlled pesticides and water quality through the existence of guidelines. Even today we have no guidelines on other chemicals, though this is about to change (see below). But a vigorous training and education programme needs to be conducted by DEC to train people in safe use and recognition of chemicals.

Another real potential problem in PNG is that of asbestos as old houses, school buildings and
hospital / health centre facilities deteriorate with age, and as PNGians grow older. The Health Department is about to employ a consultant to assess the situation in PNG. (noted in Post Courier advertisement in late October). It could be a real risk. A real problem is also lack of communication between government departments. For example DEC and NCD Health knew nothing about the Health Department's proposed consultancy on asbestos.

The lack of both an updated register of all chemicals coming into PNG and the lack of guidelines means the Environment Act remains unable to be enforced which means that the Act remains largely impotent. Mowbray noted this 15 years ago, published both in 2000 and 2004 the PNG Chemical Management Profiles (latest on UNITAR website is David Mowbray, 2004 at www2.unitar.org/cwm/nphomepage/ go to PNG or at www2.unitar.org/cwm/publications/cw/wp/np_pdf/PNG_National_Profile.pdf

It also appears at SPREP website arsenic.dbo.jp/samoa/...08-PNG/PNG_Chemical_Profile-2005dcopy.pdf. The older PNG National Chemical Profile is no longer on the web but was there until about 3 months ago However 10-15 years after these documents were published basically all of the 38 recommendations have not been acted on. PNG is a signatory to three of the four important international conventions relevant to Pacific countries on trade in chemicals (available from SPREP and NTN on a disk or see Chemical Convention Handbook at NTN Australia web address: www.ntn.org.au/toxic-geeks/chemical-conventions/). PNG has signed the Stockholm Convention (on persistent organic pollutants or POPs), the Basel and Waigani Conventions (both on waste) but has yet to ratify the Rotterdam Convention on prior informed consent (PIC). This was recommended a number of times the most recent 10 years ago! Despite great value for PNG if it were to do so. See National Toxic Network and Mowbray (2014). By signing the conventions PNG is obliged to implement them. In the area of other chemicals we do not know what is entering PNG. As mentioned the exception is for pesticide management where the appropriate regulations and guidelines have ensured that many highly hazardous pesticides are no longer imported into PNG; however even here improvements are needed to the registration system and checking for compliance to the FAO Code of Conduct on Distribution and Use of Pesticides now known as the Code of Conduct on Pesticide Management. Such improvements could lead to lesser risk from pesticide use in PNG ( Greenpeace 1992) and Mowbray (2014); also see www.pacificotoxicology.org or www.pacificotoxicology.org (both sites presently under construction). DEC through a very capable officer is now trying to address these issues. I have every confidence he will succeed. Actions are now been taken also for other chemicals. A recent new regulation has been passed (to cover “other chemicals”. This is the Environment (Registration of Contaminants and Hazardous Contaminants) Registration, 2011. The guidelines will soon begin to be drafted and it will be a long and difficult task. The author is involved in providing technical assistance for both pesticide and other chemicals management and risk reduction with DEC's Environmental Protection section working closely with officers there (many former graduates of the UPNG Environmental Science, Biology and Chemistry programmes). The author has also reestablished the old SPREP Pesticide Project (Mowbray 1988, SPREP, SPC, ARSAP, CIRAD 1990, 1994) under a new project working with SPREP, SPC and with the NGOs Pesticide Action Network Aotearoa New Zealand and National Toxics Network (see website www.pacificotoxicology.info and www.pacificotoxicology.info). This project is regionally based working with the 21 countries of the Pacific excluding Australia and New Zealand but includes PNG but is pro bono. The aim is to assist all countries develop registers of pesticides used in their countries, to reduce pesticide risk (for example ensure phasing out of highly hazardous pesticides used in the region, eg paraquat and imidacloprid and to develop a 'health and environmental effects' database for all pesticides used in the region. On these matters I am working closely with staff in DEC / CEPA. The project will be run from ESG from 2015.

Much needs to be done to have good chemical management in PNG, but I am confident this will happen but will take time and effort.
Conclusion

The above four examples of the “crazy” amendment and subsequent revoking of these amendments to the Environment Act, the SABLs, lack of support for conservation policy and the inability in the past to implement chemical management (except for pesticides even 35 years after the Act was passed into law in 1978) are clear examples of what should not happen in a country with a national strategy for responsible sustainable development and a commitment to it. This must change. I have every confidence it will!

Role of DEC / CEPA

It is clear that to carry out its mission and responsibilities DEC, now CEPA, needs more financial and man/woman power resources, a commitment to its mission and no interference from political leaders. DEC has a special role to play in the pathway to sustainable development in PNG. It needs all the support it can muster. In fairness to DEC, to quote a former student of the author’s who did her ESG work experience there in 2008:

“there is a lack of funding for both traveling and monitoring purposes and office equipment – often computers riddled with viruses (and computers crash!) and no or little internet connection. These may seem an expense to the government but it would make a lot of difference to time management and productivity of the work force. In conclusion the department does carry out its responsibilities to the best of its resources and funding. It would be able to do more but the issue of funds, equipment and an adequately skilled workforce need to be seriously looked into by the government and improvements made ...”

quote from Ramphaey Gime (personal communication), December 2008.

The Department of Environment and Conservation in 2015 is being transformed into the Conservation and Environmental Protection Authority. It clearly needs more adequate funding so it can do its job of monitoring conservation and environmental protection throughout the country on a regular and well planned approach / strategy as well as being a key partner in the new Responsible Sustainable Development Strategy.

If PNG is to attain ESD and have an effective national responsible sustainable development strategy it must be wary of taking shortcuts and fast tracking development. Such is contrary to proper ESD / RSD practice, and often leads to corruption and unsustainable activities and associated environment, social and economic costs, the environment and the community bearing the brunt. It must learn from past mistakes and not repeat them. The Department of Environment and Conservation (DEC / CEPA) and the Department of National Planning and Monitoring both have special responsibility as they are the two key departments responsible for implementing the National Strategy for (Responsible) Sustainable Development in the key areas of social, environmental and economic sustainability.

Generic Problems PNG faces

There are four other problems that a country like PNG faces in implementing a sustainable development strategy. These are discussed in an article by Victoria Elias in Felix Dodds (ed, 2000). She discusses four major barriers that countries like PNG face and slows down the move towards a sustainable society. These are: (1) the lack of peace and security within the country; a real problem throughout PNG; (2) lack of resources by implementing department or agency such as DEC / CEPA and DPM; again a real problem in PNG; DEC lacks the resources to implement its mission on
conservation and environmental protection let allow be a major player in the implementation of ESD; (3) lack of public involvement and access to information and public participation in decision-making processes; a real hurdle to overcome in PNG – needs much more formal and informal education, awareness raising and training in skills, and (4) language problems for non-English speakers as most PNGians speak mainly Tok Pisin, apart from the 850 odd other language groups.

Two further notes.

First note: Emphasis on Economic Growth

There is a continuous call for increased economic growth in PNG by all leaders, the private sector and community leaders; and they are referring to economic growth under brown development based on unsustainable resource use. The belief is that the benefits from increased economic growth will trickle down to all Papua New Guineas. This is a myth that economists have championed throughout all time. The world today consists of very rich and overdeveloped countries with ecological footprints far in excess of their biological capacity and very poor countries often with low ecological footprints but with much poverty. PNG specifically is a country of the very rich and the very poor. Clearly there is a very little trickle down effect. The life style of the few rich and their ecological footprints far exceeds the carrying capacity of the environment to supports them and is unsustainable. The ordinary villagers live relatively simple lives, have a small ecological footprint and in general live sustainably. Despite the hype and the rhetoric the benefits of PNG's increasing GNP / economic growth rarely touches many of them. Moreover economic growth is based on extraction of non-renewable resources eg minerals and oil and on unsustainable logging and agricultural practices. Our leaders may differ with my view. The important consideration in this context ought be improvements in human development, economic growth is only a means, improved human development ought to be a major objective as well as environmental sustainability. Minister Charles Abel is one who clearly recognises this and instead emphasises the need for a new PNGian way of doing things under the paradigm of green development.

At present in PNG our economic growth rates are high and unprecedented riding on a mineral and particularly oil boom. See Box 4 with quotes from Prime Minister Peter O'Neill taken from recent newspaper cuttings. But the ride will only last for a finite period of time and will end. PNG must avoid the “Dutch Disease” or resource curse where the downside of economic growth rears its ugly head. See Box 5 of quote from the editorial of the *Sunday Chronicle*, Sunday November 9, 2014 and that in Box 6 from the advisor to the National Planning and Monitoring Department's advisor on Responsible Sustainable Development.

The Asian Development Bank (2014) in a recent critical review states that challenges that PNG faces include (1) ensuring that the recent higher economic growth rates are sustainable in the medium to long term, (but high economic growth rates ensures in the long run unsustainability!) and (2) translating high economic growth into more more inclusive development (and where these benefits can be sustained!) than has prevailed to date. They found the most critical constraints were

- weaknesses in governance and institutions, particularly those relating to delivery of public services, maintaining law and order, controlling corruption, and managing land and land titles;
- poor infrastructure and infrastructure services, particularly in the case of transport, electricity and water supply;
- shortages of skilled human capital, and poor and unequal access to affordable and quality education; and
- lack of and unequal access to affordable and quality health services.
They state that by overcoming these impediments “will help” PNG achieve more inclusive economic growth that will provide the country's citizens with more equitable shared opportunities to contribute to and benefit from economic growth”. But I ask will this happen under the old paradigm which has not delivered these to date?

And there is no such thing as “Sustainable Economic Growth”. It is an oxymoron!!

**It must further be pointed out that continuous economic growth (under the old paradigm of brown development) is a contradiction in terms to the process of ecologically / responsible sustainable development.** Whereas PNG now needs a continuing economic growth to provide the benefits that Vision 2050 aims for, but not the pollution and unsustainable use of minerals and oil, in the long run the PNG economy must transform itself into a process that aims for green economic strategies/ processes with strong (not weak) economic sustainability and environmental / ecological sustainability (and social sustainability).

Another area that traditional economists ignore is the true cost of so-called externalities. These costs must be internalised. Further the true values of ecosystem services must be accounted for in any analysis of economic costs and benefits.

Only then with economic, social and environmental sustainability and good governance will we be on the road from Rio to Rai to now to ESD.

**Second Note: the need for more education and training and awareness raising**

If PNG is to move along the road to ESD then it must believe in it. Most of the people must believe in it. Minister Abel certainly does. The community and villagers too must all believe in ESD or in responsible sustainable development. It must be the road from Rio to Rai to now to ESD to ples. The ideas must be spread throughout all PNG from the cities to the remote villages; from Port Moresby, Lae, Kokopo, Aitape, Goroka, Mt Hagen, Daru, Kerema, and Madang and other main towns to Rigo and to Rai and to BogaBog the Cape Vogel and all the remote villages on islands and in the mountains, along coastal strips and along rivers. This is why education for sustainable development is so important (see Commonwealth Secretariat, 2013.) But those taking out the message must be passionate communicators, have high ethical standards and live consistently by the message they spread. At schools and universities sustainable development requires a greater focus across all disciplines. Educators need also use the media and in particular the social media which has spread so rapidly throughout PNG in recent years. Sustainable development and ESD includes a bottoms up and not top-down process of decision-making – the community, and those in the villages and not just the leaders need be involved in important decision-making. However we still need commitment and political will from our political leaders. Without this the strategy will not work. Charles Abel, the Minister for National Planning and Monitoring has committed himself and his department to achieving just this. They believe in the new paradigm of ‘green development’. We must too. In their mission statements DEC for many years has in theory committed itself to the ESD process. Political parties must do the same. Globally all Greens parties have done just that. In Australia the third largest political party with 11-15% of the national vote at both state and federal levels is committed to ESD (see NSW Greens website at www.greens.nsw.org.au). Its mission is to bring about social and political change with adherence to four key issues: peace, non-violence and disarmament; social equity and economic justice; participatory democracy; and ecological sustainability. In NSW one member of the Upper House is the Greens environment spokesperson Dr Mehreen Faruqi herself an environmental engineer and environmental scientist and co-author of the latest edition of a key text book used in courses in ESG at UPNG (Harding, Hendriks and Faruqi, 2009). Earlier this year (in early 2014) she moved a motion in the NSW Upper House that
“the NSW State Parliament reaffirm its support for the Australian Government commitment to Ecological Sustainable Development”. The motion was supported by Labor and the Greens but outvoted by the conservatives including the Liberals and so lost. The past Australian Labor Government supported by the Greens had a policy for Ecologically Sustainable Development though often erred from it, but it had a policy!. Environment Australia has produced a plethora of excellent documents on all aspects of ESD and implementing it and related publications on sustainable population and sustainable living (eg see The Present Sustainable Population Strategy for Australia -2011 Sustainable Population Strategy for Australia document
sustainable-population-strategy-australia Australian Government Productivity Commission: or
A ‘Sustainable’ Population? - Key Policy Issues - Australian ...

By its actions it is clear that the present Australian Government is not committed to ESD but accepts the old paradigm of brown development, a large and unsustainable ecological footprint and overdevelopment. (and greed!) It is only prepared to offer crumbs in international development assistance, unless it sees that something as in its economic or strategic or other interests.

In PNG the fledgeling PNG Greens Party has a similar mission with a clear commitment to ESD in Papua New Guinea (see website: www.pnggreensparty.org.pg. This is a new website and is under construction). Its draft mission statement (which its members need to discuss) is:
That the PNG Greens Party will strive to ensure that:

- PNG has an ecologically sustainable future,
- the quality of life will improve for all PNGians,
- PNGians live within the carrying capacity of our supporting ecosystems
so
- all PNGians now and in the future will be healthy, happy and wise and our environment remains healthy.

But Green Parties have not been successful in developing countries, including the Asia Pacific region (Jackson and Bhathal, 2013). The PNG Greens Party is a fledgling party and very small and presently faces deregistration due to its failure to comply with the Organic Law on the Integrity of Political Parties and Candidates 2003 (OLIPPC Law), and recent amendments to that law in 2014. These relate to finance, number of financial members and other legal and technical matters.

It would be great if our political leaders who have all supported this new way forward, the National Strategy for Responsible Sustainable Development (RSD), were to be more vociferous in their support and that they start to think and act in the new paradigm. It is believed that there is a grouping of such persons in the Government who believe in the new paradigm of green development. These leaders who have pledged their support to the new paradigm through the Alotau Accord must also pledge their political groupings in PNG to adopt similar mission statements and a policy of support, not just for Vision 2050 but also to the newly propose national strategy for responsible sustainable development or RSD. They need to accept and adopt the new paradigm. In PNG we need strong political will and a grassroots support for ESD and RSD!!
Box 3. Quotes from Prime Minister Peter O’Neill on Economic Growth.

Quotation from PM Peter O’Neill from PNG Post Courier Friday November 7, 2014 Front page

We’re on track. Growth higher than expected. …ensuring an economic growth around 5 per cent in 2014…..be assured that growth will be high

Quotation from PM Peter O’Neill from The National Friday-Sunday November 7-9, 2014 Front page

Prime Minister Peter O’Neill has assured the nation that the economy is on track, with the Government expected to achieve growth levels “unprecedented anywhere in the world”.

Quotation from PM Peter O’Neill from front page story of Sunday Chronicle, Sunday November 9, 2014

“Economy healthy, economy will grow to unprecedented levels”

“Economy healthy” The Prime Minister Peter O’Neill says Papua New Guinea’s economy is very healthy and will grow to unprecedented levels. “We will achieve growth levels that are unprecedented anywhere in the world this year and onto next year,” he said.

“The PNG economy’s growth will be much higher than what we have projected as a result of good management of the economy by our government…. it is planned to create an environment where employment continues to grow and make sure that the economy grew at 5% this year.”

“ We are spending money where we stated in the budget documents..that is on education,.. on health, ..on infrastructure,… we are running the economy of our country in a responsible manner …we can create more jobs for our people, we can create more opportunities for our people and we can build a very good society for our kids.”

Quotation from PM Peter O’Neill from The National Tuesday November 11, 2014 page 3

“O’Neill: Be inclusive with growth”

Prime Minister Peter O’Neill says reducing inequality means giving the people support and developing necessary skills they need to contribute to the economy…. inclusive growth related to PNG’s approach to economic development...we must be inclusive with the growth we’re experiencing so that it is shared by all”.

He said reducing inequality required attention to core services which empowered people to take part in the economy such as healthcare, education, law and order and infrastructure. Access to universal healthcare is enabling our people to be more healthy so that they can be productive in the economy and this helps their community. Education and skills training is essential to empower the next generation when they leave our schools.. We have implemented a free education policy so all PNG children have to go to school. This will advance literacy rates and so we will have a much better educated and trained population.. We have increased our spending on law and order initiatives and this is making the places people live and work safer. The provision of new infrastructure was essential but it had to not just be in major cities.. We are putting national government funds into local level projects.
Box 4 Downside of Economic Growth

Downside of economic growth
from the editorial of Sunday Chronicle, Sunday November 9, 2014 page 10.

OUR economy continues to grow in 2014 largely supported by the gas and mining sectors. Our economic outlook continues to remain positive in 2014 with the domestic economy projected to grow at 6.2 per cent, representing 14 years of uninterrupted economic growth.

The strong growth is supported by the gas and petroleum sector with the production and export of PNG LNG project gas; it is also supported by a rebound in the mining sector as key mines return to normal production in 2014 after the disruptions encountered in 2013.
Nickel production is also expected to ramp up to over half of full capacity lifting total output from the sector in 2014; and the agriculture, forestry, fishing sector, and other non-mineral sectors are also expected to record positive growth rates in 2014.

What does this mean to Papua New Guinea? Of course it means more wealth for the country. This enhances the country’s potential for reducing poverty and solving other social problems. There is some significant level changes taking place in the country and the future looks good. But the country should be aware of the downside of such economic growth.

As the links between economic growth and social and environmental issues are better understood, experts including economists tend to agree that this kind of growth is inevitably unsustainable. - that is, it cannot continue along the same lines for long. First, if environmental and social/human losses resulting from economic growth turn out to be higher than economic benefits (additional incomes earned by the majority of the population), the overall result for people’s wellbeing becomes negative.
Thus economic growth becomes difficult to sustain politically. Second, economic growth itself inevitably depends on its natural and social/human conditions. To be sustainable, it must rely on a certain amount of natural resources and services provided by nature, such as pollution, absorption and resource regeneration.

Moreover economic growth must be constantly nourished by the fruits of human development, such as higher qualified workers capable of technological and managerial innovations along with opportunities for their efficient use, more and better jobs, better conditions for businesses to grow, and greater democracy at all levels of decision-making.
Box 5 More on the Downside of Economic Growth

Country too dependent on minerals

quotations from National Planning and Monitoring department’s responsible sustainable development strategy adviser Allan Bird from The National, Monday November 10, 2014 page 7.

“The country’s main economic drivers have been based on non-sustainable development activities which are not healthy for its future, a national planning adviser says.

One focus of the recently launched responsible sustainable development strategy is to look at development activities which steered the country.”

“We recognise that many of the economic drivers are not sustainable,” he said. “More is heard about the unsustainable developments like mining and petroleum projects but not much on sustainable development projects.”

“The way we are developing our resources is destroying our country, so we should move towards more responsible and sustainable way of developing the country.”

“.. those responsible had not given time to develop the strategic assets that would not pollute or destroy the environment for future benefits ….some of the assets were the country’s diverse culture, rainforest, biodiversity and tuna which could be taken advantage of over other countries to make money from. However we are not conserving them. We must invest more on the strategic assets to promote sustainable development so when our mining and petroleum resources run out, we can still make money from other means.. Should we wait until the as, oil or gold runs out or should we start now? The smart thing to do is to start working on it now before the resources run out.”

“Many of our leaders who had made decisions on development did not consider sustainable development.

Our Progress Toward Sustainable Development and its Evolution

There have been sporadic documents analysing our progress toward sustainable development and different Government Departments do occasionally refer to sustainable development. But few government documents or statements referred to the National Sustainable Development Strategy (until recently). Occasionally sustainable development is referred to in lieu of social and economic development. DEC documents do refer to 'environmentally sustainable development', “environmental sustainability”and “environmentally sustainable economic growth”(Department of Environment and Conservation, 1996a, 1996b, 2007), and the Department of National Planning does refer to 'integral human development and sustainable livelihoods' (Office of National Planning ,1999). However, even a consultancy report on sustainable development funded by UNDP at that time failed to mention the agreed strategy (McMaster personal communication, 1999). Notably, the Department of Mining does have a sustainability policy as early as 2001(Banks 2001; Filer 2002). Yet the 2005 Medium Term Development Strategy 2005–2010 (MTDS) scantily or only indirectly referred to sustainability or sustainable development (Department of National Planning and Rural Development 2004). The last MTDS 2011-2015 (Department of National Planning and Monitoring, 2010) on pages 103-107 cover environment (promoting a sustainable environment) and on pages 108-110 cover Climate Change (adapt to domestic impacts of climate change and to contribute to global efforts to abate greenhouse gas emission); that is 8 pages out of 166 pages cover these important dimensions; economic aspects cover a large part of the document and social only a small number as well. It all is based on the old paradigm of brown development.
Quite often it has been hoped that the National Sustainable Development Strategy would be resurrected. However, many important reviews of PNG’s progress have been published over the years, some being quite critical of that progress. In preparation for the ten-year review of Agenda 21 (Rio + 10), the United Nations (UNDP) in Papua New Guinea advertised the position of a project coordinator (Papua New Guinea Post-Courier 25 January 2002) to manage a secretariat for Papua New Guinea’s preparation for the World Summit on Sustainable Development (‘Rio + 10’), to act as the secretary for the Papua New Guinea national steering committee and to prepare the national assessment report. Such a national review was required to document Papua New Guinea’s progress in implementing Agenda 21. The report was prepared by a team from UPNG (University of Papua New Guinea 2002), but it was never accepted, nor presented by the government at Johannesburg, due to its critical nature. The Government did attend the conference, in Johannesburg. However the report has been posted on the internet and published by UPNG (Mowbray, 2003). Papua New Guinea did submit its own report in 2004 to the Barbados Programme of Action for the Sustainable Development of Small Island Developing Countries. (Government of Papua New Guinea, 2004). In early 2005 the Government of Papua New Guinea advertised for a position of coordinator for Goal 7 of the Millennium Development Goals (on environmental sustainability). In 2006 Dr Albert Nita of ESG compiled the PNG National Assessment Report for the United National Department of Economic and Social Affairs, Commission for Sustainable Development in New York of that year. The PNG National Assessment Report on the Implementation of the Barbados Programme of Action (BPoA) for the Sustainable Development of Small Island States (SIDS) was published in 2006 on the SPREP website at www.sidsnetpacific.org for the meeting in Mauritius. In 2012 the University of Papua New Guinea again reviewed our progress since Rio (Rio + 20). Again due to its critical nature it was not accepted by the PNG Government (it is available electronically, John Duguman, personnel communication). The Government did attend the conference, also in Rio. However no PNG report is listed on the web page for National Reports, although Solomon Islands is (see www.sustainabledevelopment.un.org/rio20nationalreports.html).

However there have been some positive steps along the way with important changes introduced and key documents being published. Two key happenings are given as follows. In response to climate change issues, the PNG Government established in early 2000’s an Office of Climate Change and Sustainable Development (before that it was a section in DEC) and since have taken on board a number of important issues (including REDD and low carbon projects / activities) and tasked with responsibility to ensure that PNG follows a climate change compatible growth strategy while mitigating greenhouse gas emissions and reducing vulnerability to climate change related risk. See www.occd.gov.pg.

Vision 2050 and National Strategy of Responsible Sustainable Development.

The problems and government actions inconsistent with a sustainable development strategy are recognised clearly by Minister Abel and his staff. They suggest ‘new PNG way’ or ‘development revolution’ and commitment to the new paradigm of green development. This is spelt out in the documents produced by Charles Abel (2014a,b) and in the new national strategy for responsible sustainable development, called the “strategy” (Department of Planning and Monitoring, 2014). They propose their National Strategy of Responsible Sustainable Development.

In course 1.20402 Planning for Sustainable Development, we shall review “The Strategy” - this new paradigm as proposed by Minister Charles Abel and his department for PNG. Here both Vision 2050 (National Strategic Task Force, 2009) and that the “Strategy” proposed by Charles Abel's and the Department of National Planning and Monitoring are linked to give us a new way forward – a
Box 6 The Strategy is it a sustainable development strategy?

In Semester 2 we shall determine what is the new paradigm proposed by Minister Charles Abel and his department for PNG. We shall briefly review both Vision 2050 (National Strategic Task Force, 2009) and the “Strategy” proposed by Charles Abel's and the Department of National Planning and Monitoring - the proposed new national strategy for responsible sustainable development, based on the new paradigm of green development. We shall evaluate this new Strategy (National Strategy for Responsible Sustainable Development) against “ESD criteria” that we shall learn in this course.

In 2009 the PNG Vision 2050 was published setting out the road map for what was termed a visionary development strategy to guide our socioeconomic development 'We will be a Smart, Wise, Fair, Healthy and Happy Society by 2050.’ It was an aspirational statement and a vision for our future. However it is not a sustainable development strategy.

It shows the mission statement, and the seven pillars. These are:

- **pillar 1.** Human capital development, gender, youth and people empowerment (best and productive human resources and effective leadership
- **pillar 2.** Wealth creation, natural resources and growth nodes - dynamic and competitive econom
- **pillar 3.** Institutional development and service delivery - appropriate political and effective service delivery
- **pillar 4.** Security and international relations, united, secure and trade orientated country
- **pillar 5.** Environmental sustainability and climate change friendly nation
- **pillar 6.** Spiritual, cultural and community development
- **pillar 7.** Strategic planning, integration and control - sound and clear development planning

In April last year PNG's National Strategy for Responsible Sustainable Development (NSRSD) was launched. It aims to re-orient the country's entire economic and development efforts around an *overriding goal of sustainable development or green development*, not brown development or the old paradigm. It provides a totally new paradigm for development in PNG. It does not replace our development plans but elevates within them the principals of responsible sustainable development and strategic planning. Indeed it is the chosen pathway to achieve much of Vision 2050 and more!!

The shift is to a new roadmap towards a model that is built on sustainable development and green growth principles. NSRSD is evaluated for consistency to the key objectives and principles of ESD. It meets these with glowing consistency. It is an exciting and challenging document. Indeed it challenges many present policies of our government itself and of old and accepted ways of doing things. It suggests a completely new way, a new paradigm but also recognises a need for integration and transformation.

*We shall ask is this proposed strategy really one for ecologically sustainable development.*

Yes or no? We shall list the criteria for what constitutes a real national sustainable development process by listing key principles, objectives and processes for ESD and then evaluate whether Vision 2050 and the NSRSD linked together meet these set criteria.

The challenge is now ours to put into effect this strategy. If we do I believe PNG will travel down the road from Rio to Rai to now to ESD to ples!! It is now up to us. Stretim nau bilong tumora!!
| 1 | Internalise Externalities |
| 2 | Drives innovation |
| 3 | Maintains economic growth - sustained economic growth to include inclusive green growth strategies with maintenance of community well-being |
| 4 | Open and competitive markets; avoid trade restrictions. |
| 5 | Creates decent work and green jobs. |
| 6 | Governance inclusive; democratic; participatory; accountable; transparent: |
| 7 | Equitable, fair and just - between and within countries and between generations |
| 8 | Poverty reduction, well-being, livelihoods and social protection; access to essential services: |
| 9 | Facilitates education and skills development: |
| 10 | Support human rights, worker rights: |
| 11 | Retains and protects biodiversity and ecosystems and services, |
| 12 | Is resource and energy efficient: |
| 13 | Reflects planetary boundaries or ecological limits or scarcity: |
| 14 | Sustainable Production and Consumption lifestyles |
| 15 | Be low carbon and low emission: |
| 16 | Precautionary approach: |
| 17 | Is a means of achieving sustainable development: |
| 18 | Uses integrated decision-making: |
| 19 | Beyond the GDP Principle measures beyond GDP: indicators/metrics (recognises how GDP distorts measures of progress and welfare) |
| 20 | Promotes international co-operation; avoid conditionality's on Overseas Development Assistance and finance. |
| 21 | Is resilient to risks and shocks. |
Figure 1 The four pillars of Sustainable Development (from Chalapan Kaluwin ESG)
Conclusion

PNG has sustainable development enshrined within its Constitution. The first national strategy for sustainable development was adopted after the Rio conference and following the 1993 Waigani Seminar. Unfortunately PNG basically forgot about this strategy with a number of exceptions. Our Government has done many things inconsistent with sustainable development over the last 20 years, However a new “Responsible Sustainable Development ‘ has been championed by Mr Charles Abel and the Department of Planning and Monitoring in 2014. Minister Charles Abel has moved well out of the comfort zone of conventional development theory and for politicians.

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- Vol 1 From Hearts and Minds
- Vol 2 Voices Unheard and Unheeded
- Vol 3 A Quarter of Next to Nothing
- Vol 4 Warning Bells
- Vol 5 The Environment Strikes Back
- Vol 6 From Rio to Rai in reality


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