

Draft Declaration on Planetary Boundaries

A Commentary

By Peter Roderick

This Commentary accompanies the draft Declaration on Planetary Boundaries dated 24th October 2011 (V.1).¹ Comments are invited to inform its further development over the coming months. The draft Declaration is set out in the Annex.

Introduction

The draft Declaration on Planetary Boundaries has been prompted by the emergence in 2009 of the planetary boundaries concept in response to the possibility of irreversible and sometimes abrupt and non-linear environmental changes facing the Earth.² It is a concept based on three branches of scientific enquiry: ecological economics, global change research and sustainability science, and resilience science and its links to complex dynamics and self-regulation of living systems. Still developing and incomplete, it holds the promise of being equal to the scale of the policy, law and governance challenges needed to avert these potentially serious changes.

The Declaration's purpose is to alert the world to the type of legal, policy, governance and scientific responses that are needed in this respect – internationally, regionally and nationally - in the context of the forthcoming:

- Commonwealth Heads of Government Meeting in Perth, Australia, on 28th – 30th October 2011;
- report of UN Secretary-General's High-level Panel on Global Sustainability, later this year;
- UN Conference on Sustainable Development in Rio de Janeiro in June 2012, and beyond.

¹ The draft Declaration has been drafted by Peter Roderick. He is particularly grateful to the multi-disciplinary group of scientists, development policy and sustainability experts, and lawyers, who met at the University of Exeter on 13th October 2011 hosted by Tim Lenton, Professor of Climate Change and Earth System Science; and to WWF-UK for having funded this work. Comments can be sent to <peterroderick>, then @ followed by cjp.demon.co.uk.

² Rockström, J, *et al*, 2009, *Nature* **461**: 472-475 (*A safe operating space for humanity*). The fuller scientific paper, along with Supplementary Information, can be accessed from the 'Relevant Info' box on this web page: <http://www.stockholmresilience.org/planetary-boundaries>. A summary of seven short expert commentaries on the planetary boundary concept that were published at the same time as the *Nature* feature are available here: *Nature reports, Climate Change*, Vol. 3, October 2009, pages 112-119, <http://www.anu.edu.au/climatechange/wp-content/uploads/2009/09/climate-commentary-october-2009.pdf>.

Preamble

The short preamble recalls some of the language of the Earth Charter, and of the *Nature* feature which launched the concept. It also makes express reference to future generations, as an acknowledgment of their need to be able to live safely on Earth and to thrive.

Principle 1 – The Fundamental Principle

Principle 1 declares the fundamental idea that there are Earth-system processes necessary for securing a safe space for human beings and that these processes need to be safeguarded. It also introduces the essential three pillars of recognition, respect and responsibility, which are elaborated in the following three principles. Each of the three following principles are formulated in such a way as to apply equally – and as the case may be – at the international, regional and national levels.

Principle 2 – Recognition

Principle 2 sets out the five elements involved in recognising that there are Earth-system processes necessary for ensuring a safe operating space for humanity. It represents the minimum necessary for beginning to operationalise the concept.

Principle 2(1) involves an acknowledgment that there are such processes. This initial acceptance is essential for the coherence of all that follows. It does not require or imply an acknowledgment that these processes are as set out in the *Nature* feature, or that there are nine of them (or eight, or ten, or any specific number of them). Neither does it require or imply an acceptance of the parameters or boundaries proposed there. It does, however, require an acceptance that there are biophysical realities necessary for life on Earth and thus for human development and well-being. And it also means accepting that there is a need to act (Principle 2(2)).

The original authors' views are extremely important and influential. But for the concept to gain widespread recognition the Declaration proceeds on the assumption that a wide international understanding is both necessary and desirable. This is reflected in Principle 2(3), which requires continued researching and developing of understanding of the nature and vulnerabilities of necessary Earth-system processes, their thresholds and boundaries. These three aspects are explained further below.

Earth-system processes necessary for securing a safe operating space for humanity

The *Nature* feature identified nine of these processes – or what the authors so termed. These are climate change; rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorous cycles; stratospheric

ozone depletion; ocean acidification; global freshwater use; change in land use; chemical pollution; and atmospheric aerosol loading.

There might be other candidate processes, and it is also questionable whether they are all appropriately described as processes. The Declaration takes no view on this, but ensures a system for determining and reviewing them (which is explained further below).

Thresholds

It is necessary to understand as best we can the point in the natural world at which the relevant Earth-system process could shift into a new state with potentially serious consequences. This point, or range – the threshold - will be clearer for some processes than others, and will typically involve using a criterion (or criteria), sometimes called a ‘control variable’ or parameter. For example, in the *Nature* feature, the proposed parameter for ocean acidification is the global mean saturation state of aragonite in surface sea water, and the proposed parameters for climate change are atmospheric carbon dioxide concentration in parts per million by volume and change in radiative forcing in watts per square metre.

Boundaries

The authors of the *Nature* feature describe boundaries as “values for control variables that are either at a ‘safe’ distance from thresholds – for processes with evidence of threshold behaviour – or at dangerous levels – for processes without evidence of thresholds”. Examples from that feature include 35 million tonnes per year of N₂ removed from the atmosphere for human use in relation to the nitrogen cycle, and 4,000 km³ per year of human freshwater consumption in relation to global freshwater use. Boundaries for atmospheric aerosol loading and chemical pollution were not proposed by the authors.

These values need to be researched further, because there are large uncertainties surrounding many thresholds, which makes settling on safe boundaries more difficult. Even when they are ‘settled’, they will need to be kept under continuous review and possibly updated. The less we understand, the more likely we are to establish inaccurate boundaries, and this could work both ways: if the boundaries are too high, we will be less safe than we assumed, if they are set too low we will unnecessarily constrain human activities on this basis.

Deciding where to place these values is a normative decision for society. If they are, as the Declaration suggests, to be implemented legally, this will ultimately be a political decision, made by politicians in their role as law-makers (see Principle 3(2) further below).

The processes and boundaries are conceived of individually. But they are also tightly coupled. For example, major land use change in the Amazon can affect water resources in Tibet; and the climate change boundary depends on staying on the safe side of the freshwater, land, aerosol, nitrogen-phosphorus, ocean acidification and ozone boundaries. These inter-actions must also be further researched and understood.

Principle 2(4) is necessary in order to understand the myriad ways in which human activities affect Earth-system processes. This requires identifying the activities across the many sectors involved, including trade, finance, agriculture, industry, development and the environment

Although there will be a wide disparity between countries and sectors, there has been a huge increase in the availability of relevant data and information over the last twenty years. Principle 2(4) has been drafted on the understanding that much of what is required for effective application of the planetary boundaries concept is already available - though will not, so far, have been collected or presented by reference to it.

Principle 2(5) is aimed at making clear that without public engagement and trust, a common understanding and a shared responsibility for safeguarding necessary Earth-system processes will not arise. It will therefore be necessary to develop and communicate information in ways which are transparent and designed to encourage public involvement and trust.

Principle 3 – Respect

Principle 3 sets out the key principles for operationalising the concept in decision-making.

Principle 3(1) and (2) deals with the treatment of the scientific information and advice on thresholds and boundaries, as developed, researched and communicated under Principle 2, and as provided by the Planetary Boundaries Institution and network and assisted by the independent, transparent and participative panels under Principle 5(5) and 5(6).

An important distinction is made between thresholds and boundaries. Understanding the thresholds arises from all kinds of knowledge – the meaning of science in its widest sense. Where to place the boundaries is, ultimately, a societal and political question. Principle 3(2) therefore requires determination of boundaries to be made transparently based on scientific advice, once social and economic considerations, public opinion and a risk assessment of crossing the boundaries have been taken into account.

Principle 3(3) requires decisions to minimise the risk of crossing any of the boundaries. This would mean, for example, integration into strategic environmental assessment and

project assessment procedures, and sustainability appraisals. Designing of public sector institutions under Principle 3(4) would extend to central government, and reflect the supra-sectoral nature of the planetary boundaries concept. Designing of private sector institutions implies a radical reconfiguration of company law and the primacy of private interests.

Principle 4 - Responsibility

Principle 4 is necessary to ensure that recognition of and respect for necessary Earth-system processes is backed up by legal responsibilities which people can enforce. There have been too many examples over the years of the inadequacy of voluntary approaches for the public to have faith that without legal backing necessary Earth-system processes will be safeguarded.

Principle 4(1) suggests that States should be legally obliged, in both international and domestic law, to recognise and respect necessary Earth-system processes. Ultimately, this duty would have to be contained in an over-arching legal instrument, such as UN Convention on Planetary Boundaries. States wishing to follow the Declaration could, however, enact their own legislation, to the same effect as far as their own activities are concerned. This duty could be enforced, nationally, via an appropriately-drafted constitutional right.

It is arguable that treaties already provide to an extent for such over-arching legal objectives. For example, the UN Framework Convention on Climate Change has a broad ultimate objective to prevent dangerous anthropogenic interference with the climate system. Others (and probably the overwhelming majority) do not. For example, the UNECE Convention on Long-range Transboundary Air Pollution does not even have an objective; whilst the Convention on Biodiversity unhelpfully, from the point of view of the planetary boundaries concept, combines conservation of biological diversity, sustainable use and the fair and equitable sharing of benefits.

Principle 4(2) follows from Principle 4(1). People would be entitled to expect, for example, that scientific information would be researched, developed and communicated in accordance with Principle 2, that decisions on boundaries would be made transparently based on scientific advice, after considering social and economic matters, public opinion and a risk assessment. Express reference to remedies is intended to indicate that the responsibilities and rights under this Principle are to be effective, and not something to which only lip service is paid. Internationally, adoption of Universal Declaration of the Rights of Mother Earth would be consistent with Principle 4(2).³

³ <http://therightsofnature.org/universal-declaration/>

Principle 4(3) reflects specific application in the planetary boundaries context of the three pillars of Principle 10 of the 2002 Rio Declaration:

“Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.”

These three pillars were reiterated by UNEP’s Governing Council in 2009⁴ and are also the core of the 1998 UNECE Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (the Århus Convention). Requirement for remedies to be adequate and effective, and for access to courts to be fair, equitable, timely and not prohibitively expensive are included in these respects under Article 9.4 of that Convention,⁵ and would be implied here.

Principle 4(4) is a further mechanism aimed at ensuring that recognition and respect for necessary Earth-system process are enforced. A dedicated, legally-established, independent, properly-funded enforcer with real powers will help guarantee that these Principles would be taken seriously.

At the national level, Hungary’s Parliamentary Commissioner for Future Generations is the primary example of such an enforcer.⁶ This is an example of a strong enforcer, independent of the executive and legislature, and worthy of wider adoption.

⁴ Its ‘Draft guidelines for the development of national legislation on access to information, public participation and access to justice in environmental matters’ state: “access to environmental information enhanced the transparency of environmental governance and that it was a prerequisite for effective public participation in environmental decision-making; that public participation generally improved decision-making and enhanced its legitimacy; and that access to justice in environmental matters provided a means to permit affected parties to gain redress and to assist in the implementation and enforcement of legislation related to the environment.” www.unep.org/gc/gcss-x/download.asp?ID=1204

⁵ Article 9.4 of the Århus Convention provides: “In addition and without prejudice to paragraph 1 above, the procedures referred to in paragraphs 1, 2 and 3 [which covers access to judicial procedures] above shall provide adequate and effective remedies, including injunctive relief as appropriate, and be fair, equitable, timely and not prohibitively expensive. Decisions under this article shall be given or recorded in writing. Decisions of courts, and whenever possible of other bodies, shall be publicly accessible.”

⁶ Since 2008, the Parliamentary Commissioner for Future Generations has been one of four ombudsmen elected by the unicameral Hungarian Parliament. He is charged with protecting the constitutionally-guaranteed fundamental right to a healthy environment, and receives petitions from those concerned that that right has been, or is in danger of being, violated. He must investigate proper petitions and make recommendations to the relevant public body, and he can investigate violations on his own initiative. He

At the international level, the enforcer would be a new body, such as a UN High Commissioner for Future Generations/Environment under the supervision of the Secretary General.⁷ It has been argued that such a body could “*eliminate the overlaps among the mandates and duties of [UN] bodies dealing with environmental and sectoral issues, as well as to facilitate and strengthen the coordination of the UN’s environmental and development-related functions, [and] furthermore to enforce future generations’ interests*”.⁸

Principle 5 - Institutions

Principle 5 is critical for implementing the concept.

Institutions with responsibility for acting as ‘custodian of the concept’ – and especially as ‘keeper of the thresholds’ - are necessary, supported by panels covering scientific evidence in the widest sense, socio-economic considerations and public engagement.

This Principle envisages a global institution – the Planetary Boundaries Institution (PBI) - which could be a modified existing or a new institution, coordinating a network of other bodies regionally, nationally and sub-nationally. Determining the nature of the institutions requires consideration of several issues, some of which are discussed below.

A. Preliminary considerations

Determining the nature of the institutions needs to be informed by a consideration of its level, scale and function.

has duties aimed at improving law enforcement, legislation, and implementation of international treaties, and can ask the Constitutional Court to intervene, as well the duty to participate in formulating Hungary’s position at the EU level. He has powers aimed at controlling the activities of individuals and companies that actually and potentially harm the environment; at moving the competent regulatory authorities to use their own powers to restrain environmentally-damaging activities; and at suspending the decisions of administrative bodies which permit activities that harm the environment. In performing his functions, he has significant powers to obtain information, to enter property and to publicise his proceedings. The Commissioner has said that he also carries out strategic development and research, covering the duty of representing the interests of future generations. <http://ino.hu/en/>

⁷ This has, for example, been suggested by the Foundation for Democracy and Sustainable Development in evidence to the House of Commons Environmental Audit Committee’s inquiry on Preparations for the Rio +20 Summit:

<http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenvaud/writev/rio/m07.htm>

⁸ ‘A preliminary examination of the possibilities for the institutional representation of the interests of future generations and environmental protection within the system of the United Nations’ (2011), a paper prepared by Horváth Luca Kornélia, Office for the Hungarian Parliamentary Commissioner the office of the Hungarian Commissioner for Future Generations, available here:

<http://www.stakeholderforum.org/fileadmin/files/SDG%20Luca%20final.pdf>

Level

Recognising, respecting and being responsible for safeguarding biophysical realities necessary for human development and well-being is neither, initially, a sectoral concern nor a multi-sectoral concern. Rather, the concept is initially of a supra-sectoral nature, and this core characteristic needs to inform the level at which the institutional custodian should be located.

Scale

Planetary thresholds and boundaries are, by definition, of international relevance. This calls for an international institution – the PBI - as a minimum. But regional and national (including local) scales are also critically important. The human activities which in the aggregate affect planetary boundaries take place at these scales. Keeping within all boundaries will depend on what happens at these scales, and the policy, legal and governance responses to some of them might very well be mainly at such scales. In addition, some of the “planetary” boundaries may be of regional national or local concern rather than truly global - compare and contrast greenhouse gas emissions (global), aerosol pollution (regional) and eutrophication (predominantly local). Principle 5(1) therefore envisages a network of institutions at all these scales, as appropriate.

Function

It is often said that ‘form follows function’, rather than the other way around. The functions of the PBI and the network would be to promote and develop the Declaration, in cooperation with the relevant range of existing institutions and organisations. This requires bodies with the job of keeping an eye on the necessary Earth-system processes which are pre-conditions, not optional luxuries, for human development and well-being to be able to relate to these other institutions and organisations at a supra-sectoral level, at whatever scale. The ‘reflex’ alternative – locating the function in an environmental or sustainable development body – would not give the concept an institution equal to the nature of its task, and would blur the distinction between thresholds and boundaries.

Put another way: the institutional home would be “keeper of the thresholds”, and would advise on and monitor the boundaries, but the setting of the boundaries would ultimately be a task performed under the auspices of the sectoral institutions and processes.

The functions would include promoting and tracking the concept’s scientific development; acting as the central registry for data and information on the concept, its parameters and thresholds, and activities that affect them, drawing from (and not duplicating) data and information provided by sectoral bodies; and doing so with all stakeholders, with a view to developing and proposing an international legal instrument – possibly a draft UN Planetary Boundaries Convention - establishing a Planetary Boundaries Commission, or perhaps regional legal instruments, to further the initial tasks, and to foster cooperation, research and exchange of data and information across

the wide range of processes and bodies, with a view to ensuring that keeping within planetary boundaries becomes legally embedded in the relevant sectoral Conventions and international agreements.

B. Location of the PBI

The draft Declaration is silent about the location of an institution at the international level, and leaves open whether it should be an existing or a new organisation. That said, however, the PBI needs to be appropriate to the nature and function of the concept. A number of observations on this are made in the following paragraphs.

ECOSOC's powers, in conjunction with the Secretary-General and the Environmental Management Group, appear to make it a suitable candidate for an initial institutional home

The only currently-existing international supra-sectoral bodies potentially equal to the task in my view are the “principal organs” of the UN (established under Article 7 of the UN Charter): the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the International Court of Justice, and the Secretariat. Their functions, however, could not be changed without amending the UN Charter. If this was necessary, it would be a significant undertaking, requiring under Article 108 a two thirds majority of General Assembly members, including all permanent members of the Security Council. In the light of the threats to the very stability of the planet, arguing for Charter-amendment, if necessary, would not be an unreasonable position to take – though it would obviously be fraught with difficulty.

There is also scope, however, within the current Charter for one of the principal organs becoming – at least to begin with - the institutional home.

For example, a wide array of powers is already at the disposal of the Economic and Social Council (ECOSOC), one or more of which could be exercised:

- to make or initiate a study or report on planetary boundaries, and to make recommendations to the General Assembly, to UN Members, and to specialized agencies (under Article 62(1) of the Charter);
- to prepare a draft Convention on Planetary Boundaries for submission to the General Assembly (Article 62(3));
- to call an international conference on the issue (Article 62(4));
- to amend the agreements made with specialized agencies under Article 63(1), subject to General Assembly approval, to reflect the Principles in the Declaration;
- to coordinate the activities of the specialized agencies in relation to planetary boundaries through consultation with and recommendations to them, and through recommendations to the General Assembly and to UN members (Article 63(2));

- to take appropriate steps to obtain regular reports from the specialized agencies in relation to planetary boundaries (Article 64(1));
- to furnish information on planetary boundaries to the Security Council (Article 65);

ECOSOC also has power to set up commissions in economic and social fields and for the promotion of human rights, and such other commissions as may be required for the performance of its functions.⁹

A parallel could be drawn here in the planetary boundaries context with the role of ECOSOC in relation to the 2005 World Summit Outcome and Millennium Development Goals. In its resolution following adoption of the outcome, the General Assembly:

*“reaffirm[ed] the role that the Charter and the General Assembly have vested in the Economic and Social Council and recognize the need for a more effective Economic and Social Council as a principal body for coordination, policy review, policy dialogue and recommendations on issues of economic and social development, as well as for implementation of the international development goals agreed at the major United Nations conferences and summits, including the Millennium Development Goals”*¹⁰

and laid down a number of activities to achieve these objectives, including playing “a major role in the overall coordination of funds, programmes and agencies, ensuring coherence among them and avoiding duplication of mandates and activities”.

There would therefore seem to be more than ample justification for ECOSOC being a suitable candidate for the international PBI. This could be in conjunction with the Secretary-General, who shall perform the functions entrusted him by ECOSOC, *inter alios* (Article 98).

It is also possible to see a (slightly modified) Environmental Management Group (EMG) playing a role in this context.

The EMG is a UN System-wide coordination body established in 2001 pursuant to a proposal from the Secretary-General and General Assembly resolution 53/242 in July 1999,¹¹ relating to coordination and cooperation in the fields of environment and human settlements. It is chaired by the head of UNEP, and its 45 members consist of the specialized agencies, programmes and organs of the UN, including MEA secretariats.¹²

⁹ There are 9 ECOSOC Functional Commissions (including the Commission on Sustainable Development), and 5 Regional Commissions: <http://www.un.org/en/ecosoc/about/subsidiary.shtml>

¹⁰ Resolution 60/1, 24th October 2005, paragraph 155, available here:

<http://www.un.org/womenwatch/ods/A-RES-60-1-E.pdf>

¹¹ http://www.unemg.org/Portals/27/Documents/About/a_53_242.pdf

¹² The listed members are: the Secretariats of the CBD, CITES, Bonn Convention on Migratory Species, Ramsar Convention on Wetlands, Basel Convention, UN Convention to Combat Desertification and of the

According to its website:

“The EMG furthers inter-agency Cooperation in support of the implementation of the international environmental and human settlement agenda. It identifies issues on the agenda that warrant joint efforts, and finds ways of engaging its collective capacity in coherent management responses to those issues. The current issues under consideration by the group include: IMG on Land, IMG on Biodiversity, IMG on Green Economy, IMG on Sustainability Management, Inputs for International and Environment Governance (IEG) and the EMG Consultative Process on Environmental and Social Safeguards.”

On the basis of its Terms of Reference, and despite some alarm bells, it is difficult to see how this Group cannot be relevant to planetary boundaries. For example, its mandate is:

“To provide and effective, coordinated and flexible UN system response to and to facilitate joint action aimed at finding solutions to important and newly emerging specific issues of environmental and human settlements concern, through an issue management approach as outlined in the report of the Secretary-General entitled 'Renewing the UN: A Programme for Reform' (A/51/950).

[and]

To promote inter-linkages, encourage timely and relevant exchange of data and information on specific issues and compatibility of different approaches to finding solutions to those common problems, contribute to the synergy and complementarity among and between activities of its members in the fields of environment and human settlements, and hence act in a complementary manner and add value to the existing UN system-wide inter-agency cooperation.”¹³

Two of its four objectives also seem particularly pertinent:

“To identify, address and resolve collectively specific problems, issues and tasks on the environmental and human settlements agenda requiring enhanced inter-

UNFCCC; Food and Agriculture Organisation; the World Bank Group; the Global Environment Facility; the WTO; International Atomic Energy Agency; International Civil Aviation Organisation; International Fund for Agricultural Development; International Labour Organisation; International Maritime Organisation; UN International Strategy for Disaster Reduction secretariat; International Trade Centre; International Telecommunications Union; Office for the Coordination of Humanitarian Affairs; Office of the High Commissioner for Human Rights; UN Conference on Trade and Development; UN Department of Economic and Social Affairs, Division for Sustainable Development; UNDP; UNEP; UNESCO; UN Population Fund; UN Human Settlements Programme; UN High Commissioner for Refugees; UNICEF; UN Industrial Development Organisation; UN Institute for Training and Research; UN University; Universal Postal Union; World Food Program; WHO; World Intellectual Property Organisation; WMO; World Tourism Organisation; UN Department of Field Support and the five UN regional commissions.

<http://www.unemg.org/About/Membership/tabid/1149/Default.aspx>

¹³ <http://www.unemg.org/Portals/27/Documents/About/EMG%20TORs.pdf>

agency cooperation in a given time-frame through securing effective and collaborative involvement of the relevant UN system agencies, programmes and organs and of other potential partners, as appropriate;
To provide a forum for an early discussion and sharing of information on emerging problems and issues in the field of environment and human settlements geared at finding collectively the most effective coordinated approach to the solution of the new tasks."

The Terms of Reference also provide for issues that will be addressed by the EMG to be identified at their (at least) annual meeting, and to establish as appropriate an ad hoc issue management group. UNEP will normally be the lead agency and will chair the ad hoc issue management groups, though a group may by consensus nominate another lead agency if it is found this is found appropriate in light of the specific task. Representatives of civil society and of IGOs with potential and specific expertise may be invited by the EMG Chairman to participate upon the request of Group members in EMG meetings, taking due account of UN rules and procedures; and may participate in the work of an ad hoc management group.

It does not seem that the EMG should become the PBI – at least not without an underlying legal instrument. But its mandate aimed at finding solutions to important and newly emerging specific issues, and its objective to provide a forum for early discussion and sharing of information on emerging problems and issues, suggest that it might be an appropriate forum for developing the Declaration and the planetary boundaries concept at the UN system-wide level. Given that its membership consists of many of the international bodies with whom the PBI would cooperate (see section C below), it is also possible to imagine it having a continuing institutional role. If a PBI was put in place – and if this was procedurally sensible and not duplicatory – the EMG could, for example, inform the PBI understanding of thresholds, and provide a link between the PBI's advice on boundaries and the determination of those boundaries under and within the respective agreements and agencies.

Existing and/or strengthened sectoral or multi-sectoral institutions must also play a role

Increased attention is being paid at the moment, necessarily, to improving the institutional aspect of environmental and sustainable development governance. Should UNEP be strengthened? Could the Commission on Sustainable Development be made more effective? What about a World Environment Organisation? Would a UN High Commissioner for Future Generations or national Ombudspersons for Future Generations help? Is it time for a World Environment Court?

Strengthening sustainable development, including environmental, governance is more than adequately justified, and would have an important influence on the development and application of the planetary boundaries concept. Deciding upon the international PBI, however, is not dependent on the pros and cons of these (and other) sectoral or

multi-sectoral options. Rather, as “keeper of the thresholds”, the PBI would cooperate with and relate to these (and other) institutions in the context of the boundaries – and they would, in turn, have their own commitments (see Principle 6(1)).

C. Bodies with whom the PBI would cooperate

The PBI would be responsible for coordinating with other international bodies, processes and Secretariats for the purpose of promoting and developing the Principles – for example, in conjunction with the scientific panel, exchanging information and data relating to the thresholds and advice on the boundaries; and considering, proposing and developing with these bodies the implications of the concept for their processes.

This would apply across the range of human activities that affect the relevant Earth-system processes, and so would include:

- the 15 UN specialized agencies, such as the Food and Agriculture Organization, the International Civil Aviation Organization, the International Maritime Organization, the International Monetary Fund, the World Bank Group and the World Health Organization;
- related organizations and their associated legal agreements, such as the International Atomic Energy Agency, the Organisation for the Prohibition of Chemical Weapons and the World Trade Organization;
- the Secretariats and Subsidiary Bodies of UN Conventions (and their Protocols), such as the UN Convention to Combat Desertification and the UN Framework Convention on Climate Change;
- the Secretariats and Subsidiary Bodies of other relevant global and regional Conventions (and their Protocols), particularly multilateral environmental agreements, such as the Convention on Biodiversity, the Ramsar Convention on Wetlands, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Stockholm Convention on Persistent Organic Pollutants (POPs), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the UN Convention on the Law of the Sea, and including the Conventions of the 5 UN Regional Commissions.

D. The panels

The PBI and network will need to be assisted in its work by panels which cover science in the broadest sense, as well as those covering socio-economic considerations and public engagement. In turn, the panels will need to cooperate, for example, with scientific groups operating at sectoral levels, such as the Intergovernmental Panel on Climate

Change¹⁴ and the (still emerging) Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.¹⁵ The PBI and network would also benefit from and draw on the work of other non-official scientific bodies, such as the Global Phosphorus Research Initiative and the U.S. Ocean Carbon and Biogeochemistry Program.

Principle 6 – Commitments

The Declaration envisages commitments being made by UN bodies and agencies, other international institutions and inter-governmental organisations with responsibilities for activities that affect necessary Earth-system processes, regional economic integration organisations and States.

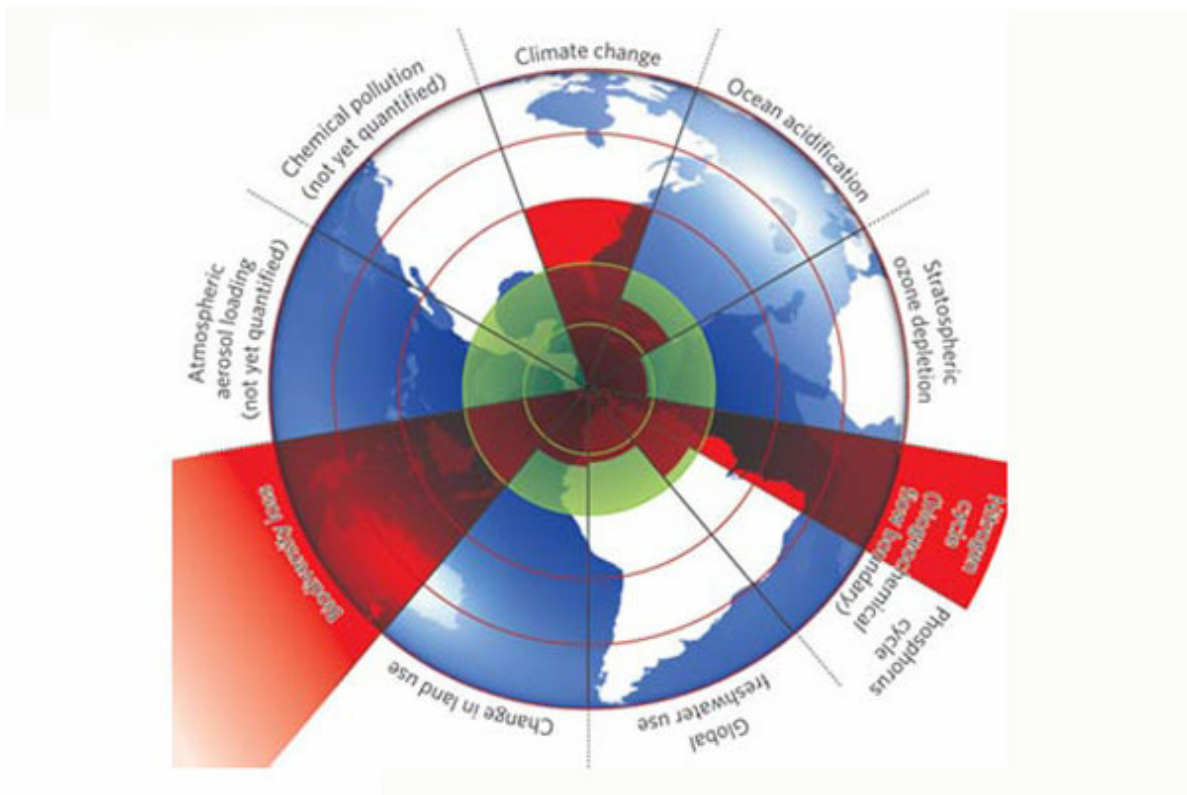
The key initial commitment would be to review the laws, policies and strategies that are currently in place for recognising, respecting and being responsible for safeguarding necessary Earth-system processes from the threats of serious or irreversible damage as a result of human activities in accordance with the Principles. This review would be used as the basis for working out what changes needed to be made in order to apply the Principles. Cooperation with the PBI and the network would be needed at the appropriate level, including information sharing. Reports would be made periodically to the PBI, the network and the independent enforcement body under Principle 4(4) on the effects of activities on necessary earth-system processes, and on the extent to which the Principles are being applied.

In reviewing and improving their laws and policies, States and regional economic integration organisations would also have to consider the impact of their activities on Earth-system processes that are necessary for ensuring a safe operating space for humanity, and how they can ensure that their activities do not exceed their fair share of that safe operating space.

¹⁴ The IPCC was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to “assess... the scientific information that is related to the various components of the climate change issue....[and to] formulate...realistic response strategies...” [Preface, IPCC first assessment report, 1990], and was endorsed by UN General Assembly Resolution 43/53, dated 6th December 1988, available here: <http://ipcc.ch/docs/UNGA43-53.pdf>.

¹⁵ “IPBES will be an interface between the scientific community and policymakers that aims at building capacity for and strengthen the use of science in policymaking.” <http://ipbes.net/about-ipbes/frequently-asked-questions.html>

Draft Declaration on Planetary Boundaries



V.1, 24th October 2011

An Introduction to the Draft Declaration on Planetary Boundaries

In 2009, 29 scientists published a paper putting forward the planetary boundaries concept. The concept posits that there are nine critical Earth-system processes and associated thresholds that we need to respect and keep within, in order to protect against the risk of irreversible or even catastrophic environmental change at continental to global scales. Doing so would create a safe operating space for humanity, within which human economy and society would be able to play out. According to the concept's authors, three of the nine suggested thresholds have already been crossed (for climate change, biodiversity and the nitrogen cycle).¹⁶

What is new about the concept is that, rather than understanding environment, economy and society as three pillars of sustainable development, it makes clear that sustainable development can only take place within the safe operating space identified by the biophysical realities of critical natural thresholds.

The idea has been acknowledged by the Secretary-General's High-Level Panel on Global Sustainability: the overall goal for its report later this year and input into Rio+20 is *"To eradicate poverty and reduce inequality, make growth inclusive, and production and consumption more sustainable while combating climate change and respecting the range of other planetary boundaries."*

The planetary boundaries concept has important implications for future governance systems. Current systems, including international laws, have not yet developed sustainability principles that ensure stable and resilient ecological systems for protecting human health and well being. Instead our institutions are often caught in conflict between short-term financial gains and long-term sustainability.

The draft Declaration on Planetary Boundaries on the following pages is intended as a statement of first principles that lay the institutional framework for such planetary boundary thinking. It calls for humanity to recognize, respect and be responsible for not transgressing planetary boundaries – internationally, regionally, nationally and locally. It sets out general requirements under each of these three heads, and provides for an over-arching institutional home which cooperates with current institutions and actors across the range of human activities that affect planetary boundaries. In time, such an institution could become - under a UN Convention on Planetary Boundaries - an over-arching Planetary Boundaries Commission.

Rio +20 is an obvious opportunity to explore this innovative approach to sustainable development, including in order to develop ideas around Sustainable Development Goals and/or Millennium Consumption Goals.

Those behind this Declaration believe there is an urgent need to take action on this governance issue to ensure that everyone, including present and future generations and particularly the vulnerable and marginalised, have the protections and rights necessary to live in a social and physical environment that provides for their health and well being.

¹⁶ Rockström, J et al. Planetary boundaries: Exploring the safe operating space for humanity. *Ecology and Society* [online] 14, 32 (2009). Available online at www.ecologyandsociety.org/vol14/iss2/art32

Draft Declaration on Planetary Boundaries

We, the peoples and nations of our planet, Earth,

Cherishing its beauty, diversity, vitality and community of life,

Recognising the innate linkages between components of the ecosystems that sustain life, and *valuing* their fundamental role for human existence, development and well-being,

Conscious of facing a critical period in the history of our planet,

Concerned that rapidly growing dependence on fossil fuels, industrialised forms of agriculture and escalating demands on natural resources have reached a level that could damage the biogeochemical feedback systems that maintain a habitable planet, resulting in irreversible and, in some cases, abrupt environmental change, which could profoundly undermine long-term human existence and that of other forms of life,

Recalling commitments made at the United Nations Conference on Environment and Development in respect of sustainable development and future generations, and in particular, Principle 15 of the Rio Declaration concerning application of the precautionary principle,

Determined to respond to the strong scientific consensus and growing evidence base that there are identifiable Earth-system processes on which human existence, development and well-being depend, and which must be safeguarded from the threats of serious or irreversible damage as a result of human activities,

Recognising that safeguarding those processes from such threats is necessary in order to promote sustainable human development and social justice, and likewise that promoting sustainable human development and social justice is necessary for safeguarding those processes,

NOW DECLARE AS FOLLOWS:

Principle 1 – The Fundamental Principle

Earth-system processes that are necessary for ensuring a safe operating space for humanity should be recognised and respected. We are all responsible for safeguarding those processes from the threats of serious or irreversible damage as a result of human activities.

Principle 2 – Recognition

Recognition of necessary Earth-system processes means:

- (1) acknowledging that such processes exist;
- (2) acknowledging the need to act in order to safeguard such processes from the threats of serious or irreversible damage as a result of human activities;
- (3) researching and developing our understanding of the nature and vulnerabilities of such processes, including of the thresholds at which they could shift into new states and of where boundaries at a safe distance from such thresholds would lie;
- (4) identifying the human activities that affect such processes, and monitoring the effects of such activities, including collecting, collating and presenting scientific data and information by reference to such processes and the human activities which affect them; and
- (5) developing and communicating information about such processes in ways which are transparent and designed to encourage public engagement, trust, common understanding and acceptance of shared responsibility for safeguarding them.

Principle 3 - Respect

Respect for necessary Earth-system processes means:

- (1) using scientific information to understand their thresholds;
- (2) determining their boundaries transparently on the basis of scientific advice, having taken into account social and economic considerations, public opinion and having assessed the risk of crossing the boundaries;
- (3) making decisions, across the range of human activities which affect such processes, to minimise the risk of crossing the boundaries;
- (4) designing appropriate public and private sector institutions in order to safeguard such thresholds and boundaries.

Principle 4 - Responsibility

Being responsible for safeguarding necessary Earth-system processes means:

- (1) establishing over-arching legal principles and duties to recognise and respect such processes across the range of human activities that affect them;
- (2) ensuring people have the right to have them recognised and respected;
- (3) guaranteeing rights to information, participation and access to justice, including appropriate and effective remedies; and
- (4) creating an independent public enforcement body with appropriate and effective legal powers and duties.

Principle 5 - Institutions

- (1) The function of promoting and developing these Principles should be conferred on an over-arching international body (the Planetary Boundaries Institution (PBI)), coordinating a network of regional, national, and sub-national bodies.
- (2) The function of promoting and developing these Principles involves cooperation among the PBI and the network, and institutions and organisations with responsibilities across the range of human activities that affect necessary Earth-system processes, at the appropriate levels, as well as engagement and communication with the public.
- (3) The PBI and network will also have the function at the appropriate level of providing scientific information and advice for the purposes of Principle 3(1) and (2), based on coordination of the evidence available from research on the thresholds and boundaries of necessary Earth-system processes.
- (4) The PBI and network will be assisted in its work by independent, transparent and participative panels at international, regional and national levels, especially in relation to scientific and other research evidence, socio-economic considerations and public engagement.

Principle 6 - Commitments

(1) UN bodies and agencies, other international institutions and inter-governmental organisations with responsibilities for activities that affect necessary Earth-system processes, regional economic integration organisations and States will:

- (a) review the laws, policies, strategies and arrangements they have in place for recognising, respecting and being responsible for safeguarding necessary Earth-system processes from the threats of serious or irreversible damage as a result of human activities in accordance with these Principles;
- (b) make any improvements necessary to apply these Principles;
- (c) cooperate with, provide to and exchange data and information with the PBI and network at the appropriate level; and
- (d) report periodically to the PBI and the network at the appropriate level and the independent enforcement body under Principle 4(4) on the effects of activities on such processes and on the extent to which they are applying these Principles.

2. In reviewing and improving their laws, policies, strategies and arrangements, States and regional economic integration organisations will, in conjunction with the PBI and network at the appropriate level, consider:

- (a) the impact of their activities on Earth-system processes that are necessary for ensuring a safe operating space for humanity, and
- (b) how they can ensure that their activities do not exceed their fair share of that safe operating space.