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EDITORIAL

The Editorial team of Environmental Law and Practice Review [ELPR] brings forth the second volume of its journal. The journal has contributions from scholars on invitation as well as solicitation. The editorial team is happy to publish on wide ranging issues within the field of environmental law and have contributions from scholars across countries.

The paper on "The Role of National Human Rights Institutions in Environment Protection: A Focus on the Asia-Pacific" discusses at length the need for national human rights institutions to protect environment within the frame work of human rights law and try to build case for stand-alone right to environment besides strengthen the protection under the human rights frame work. The authors substantiate their argument with the help of international instruments, case law developed within States and authoritative readings.

The paper on "Impacts of Overlapping Protected Areas on Poverty Alleviation: A Case Study of the Three – Parallel Rivers Area" discusses the protected area impact on poverty alleviation in the context of bio diversity rich interior area in china where few minorities made their living for generations. The paper emphasizes the need for planned protection of protected area as the authors argue that multiple administrators and multiple agencies could result in an unplanned developed and may further impoverish the local community

The paper on "Ocean Based Technological Responses to Climate Change: Do Legal Uncertainties Present a Significant Investment Risk" discusses range of clean energy technologies aimed at climate change mitigation and the risk of investment due to legal uncertainty. The author however agrees that substantial effort is made by government to regulate them and help the industry as the political will to encourage renewable energy is highly prevalent. However the argument that a clear legal regime would encourage investment in the ocean based clean energy field is highlighted.

The paper on "Conceived in Rio, Born and Raised in Geneva, Frequenting Paris, Yet to Go Around the World: The Regulation of Traditional Medicinal Knowledge" discusses at length the ambiguity that still exists in international as well as national regulation of traditional medicine. At International level the author states that all International Organs such as WIPO, WTO, and COP etc. should come together and

strategize for comprehensive regulation as it is more than a decade now that the issue has come to the forefront and is addressed as piece meal. At national level the author goes to the extent of suggesting what a model policy draft on traditional medicine should contain and argues that legislation can be built on the lines of the policy guidelines.

The paper on "Legislating Energy Transportation Corridors" discusses the experience of United Kingdom and America on resolving legal issues with enactments. The author favors the idea that the three new enactments of the United Kingdom would help in promoting sustainable development. The author believes that unlike previous project to project approach the new legislations provide proactive approach and strategic planning.

The paper on "Natural Resource Management and Conflict Resolution in Sub-Saharan Africa: The case of Nigeria" discusses the role of local communities in preventing land degradation. The author argues that national resource management is better handled by customary institutions however for it to happen there is a need for vertical linking of the institutions. He argues that Nigeria already witnessed positive benefits of decentralization in natural resource management and states that now there is need for vertical linkage of these institutions for further enhancing the benefits and removing the inequities.

The paper on "Addressing Inequality Trends in Climate Change Mitigation Policy Measures and Projects: Reflections on post 2012 Outlooks" discusses the adverse impact of CDM projects in poor countries. The author substantiates the argument with the help of case studies that these projects had resulted in human rights violation in those places. The author is of the opinion that future negotiations on climate change treaty should consider these violations not only for transparency and accountability but also for future international cooperation regarding climate change mitigation and adaptation measures.

The paper on "Towards A coherent framework for achieving environmental sustainability in investment decisions: Reflection on Rio +20 and the Judicial Conference" discusses the challenges posed by sustainable development in balancing development and environment sustainability. The author substantiates the argument with case studies drawn from arbitration proceedings involving issues pertaining to environment and international investment law. The author seeks a more robust implementation mechanism for environment protection.

The papers of enthusiastic undergraduate students on environmental judicial activism, GM Crops and International Climate summits also merit finding their place in this volume.

The Board of Editors would like to thank the following people for their valuable contributions to the reviewing process: Sourabh Bharti, Roopa Madhav, Malak Bhatt, Raadhika Gupta, Sanghamitra Padhy, Sangeeta Shah, John Takang, Gabriel Eckstein and Benoit Mayer. The Board would also like to extend their gratitude to Seema Kakade and Nagendra Todaria for their support to the ELPR.

The Editorial Board, ELPR

THE ROLE OF NATIONAL HUMAN RIGHTS INSTITUTIONS IN ENVIRONMENTAL PROTECTION: A FOCUS ON THE ASIA-PACIFIC

Salma Yusuf[*] and Jennifer Woodham[**]

ABSTRACT

The article is set within the context of the emerging discourse on human rights and environmental protection. It seeks to inject a new paradigm into the discourse by demonstrating how a human rights based approach could aid the advancement of the agenda of environmental protection, through an examination of a minimally explored national institutional mechanism, namely, National Human Rights Institutions (NHRIs).

The article assesses the interest demonstrated thus far by NHRIs in the Asia-Pacific region in guarding the environment, and considers their role in advancing environmental protection. It is intended to inform the work of practitioners working in NHRIs, encouraging a consideration of the relevance of the environment to their work, and advocating environmental protection as a means to secure human rights. The article goes further to suggest the

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development of a robust policy approach that will eventually culminate in a stand-alone human right to the environment as can be advocated by NHRIs.

1. NATIONAL HUMAN RIGHTS INSTITUTIONS AND ENVIRONMENTAL PROTECTION: THE ESSENTIAL RELATIONSHIP

The majority of scholars agree that there is no formal right to an environment of a particular quality in existence at present;[1] however there is little doubt that a decent environment is necessary to the fulfillment of many existing human rights.[2] International, regional and national courts have now begun to use more traditional human rights such as the right to life and right to health to secure protection for the environment. Against such an emerging backdrop, national human rights institutions (NHRIs) could and indeed should have an interest in securing environmental protection.

This article aims to assess the prevailing interest of NHRIs in the Asia-Pacific region in protecting the environment, and to consider their role in securing such protection. It is intended to inform the work of practitioners within these NHRIs, encouraging them to consider the relevance of the environment to their work, and to advocate environmental protection as a means to secure human rights for human rights practitioners

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1 Susan Glazbrook, *Human Rights and the Environment,* 40 VUWLR 293 ((2009), 310-311. The author states that she agrees with the general consensus that a human right to environment does not currently exist (hereinafter Susan Glazbrook).

2 Dinah Shelton, *Human Rights and the Environment: What Specific Environmental Rights have been Recognised?,* 35 DENV. J. INT'L L. & POL'Y 130 (2007), 169. The author concludes that 'The interrelationship between human rights and the environment is undeniable'.; Annual Report of the United Nations High Commissioner for Human Rights: Analytical Study on the relationship between human rights and the environment, Dec., 2011, A/HRC/19/34; Alan Boyle, *Human Rights and Environment: A Reassessment,* UNEP, http://www.unep.org/environmentalgovernance/Events/HumanRightsandEnvironment/tabid/2046/language/en-US/Default.aspx; *Conclusions of the Meeting of Experts on Human Rights and the Environment* (14-15 Jan., 2002), THE UNITED NATIONS ENVIRONMENT PROGRAMME AND THE OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS, http://www2.ohchr.org/english/issues/environment/environ/conclusions.htm; *Expert Seminar on Human Rights and the Environment: Background Papers No. 1 – 6,* THE UNITED NATIONS ENVIRONMENT PROGRAMME AND THE OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS, http://www2.ohchr.org/english/issues/environment/environ/index.htm.

more generally. The article also aims to go further by suggesting that a stand-alone human right to environment should be advocated by NHRIs.

The Asia-Pacific region is focused on because of its current relevance as a result of the compelling effect of a combination of ensuing factors in the world we live: the impact that environmental damage is already having in that 'Asia is experiencing an increasing exposure to "modern" forms environmental health risks'[3]coupled with a worry that climate change will create many 'environmental refugees' within the Pacific region.[4] Accordingly, it is essential that action is taken in immediacy to avoid adverse consequences in the future – and as the article demonstrates, there is no reason why NHRIs cannot lead the way in this regard.

2. NATIONAL HUMAN RIGHTS INSTITUTIONS

International criteria exist for the regulation of NHRIs. They are incorporated within what are called the "Paris Principles."[5] In other words, the Paris Principles are international standards and serve as minimum conditions that an NHRI must meet to be considered credible by its peers and within the United Nations system. The Paris Principles were defined at the first International Workshop on National Institutions for the Promotion and Protection of Human Rights held in Paris on 7-9 October 1991. They were adopted by the UN Human Rights Commission[6] and by the UN General Assembly[7]. Therefore, the Paris Principles relate to both

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3 *Environment Strategy for the World Bank in the East Asia and Pacific Region* (Mar., 2005), THE WORLD BANK, http://siteresources.worldbank.org/ INTEAPREGTOPENVIRONMENT /Resources/EAP_EStrat_Web_whole.pdf, at 6

4 Susan Glazbrook, *supra* note 1, at 340.

5 Principles relating to the Status of National Institutions, 20 Dec., 1993, A/RES/48/134 (hereinafter Paris Principles Resolution); *OCHR and NHRIs,* THE OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS, http://www.ohchr.org/EN/Countries/NHRI/Pages/NHRIMain.aspx; Report by the Secretary-General on National Institutions for the Promotion and Protection of Human Rights, 8 Aug., 2011, A/66/274; The Secretary-General's Report on National Institutions for the Promotion and Protection of Human Rights, 7 Feb., 2011, A/HRC/16/76: giving a detailed account of OHCHR's activities, including implemented in partnership with other networks and institutions; Report by the Secretary-General on the Role of the Ombudsman, Mediator and Other National Human Rights Institutions in the Promotion and Protection of Human Rights, 1 Sept., 2010, A/65/340.

6 3 Mar,, 1992, Commission on Human Rights Resolution 1992/54.

7 Paris Principles Resolution, *supra* note 5.

the status and functioning of national institutions for the protection and promotion of human rights.

In addition to exchanging views on existing arrangements, the workshop participants drew up a comprehensive series of recommendations on the role, composition, status and functions of NHRIs. They provide benchmarks against which proposed, new and existing NHRIs can be assessed or "accredited" by the International Coordinating Committee's Sub-Committee on Accreditation. Gaps or shortcomings identified during the accreditation process can then serve as a road map or template to improve NHRIs. The Paris Principles are standards that *all* NHRIs should meet and also contain additional principles that apply only to institutions with "quasi-jurisdictional" competence.

Under the Paris Principles, NHRIs are required to: Protect human rights, including by receiving, investigating and resolving complaints, mediating conflicts and monitoring activities; and Promote human rights, through education, outreach, the media, publications, training and capacity-building, as well as by advising and assisting Governments.

The Paris Principles set out what a fully functioning NHRI is and identify six main criteria that these institutions should meet to be successful: Mandate and competence: a broad mandate based on universal human rights standards; Autonomy from Government; Independence guaranteed by statute or constitution; Pluralism, including through membership and/or effective cooperation; Adequate resources; and adequate powers of investigation.

The Paris Principles list a number of responsibilities for national institutions, which fall under five headings. First, the institution shall monitor any situation of violation of human rights which it decides to take up. Second, the institution shall be able to advise the Government, the Parliament and any other competent body on specific violations, on issues related to legislation and general compliance and implementation with international human rights instruments. Third, the institution shall relate to regional and international organizations. Fourth, the institution shall have a mandate to educate and inform in the field of human rights. Fifth, some compliance with the Paris Principles is the central requirement of the accreditation process that regulates NHRI access to the UN Human Rights Council and other bodies. This is a peer-review system operated by a subcommittee of the International Coordinating Committee of NHRIs.

Over the past two decades, the UN General Assembly and other bodies have issued resolutions of relevance to NHRIs.[8] At the International Conference held in Tunis in 1993, NHRIs established the International Coordinating Committee of National Institutions for the Promotion and Protection of Human Rights (ICC) with the aim to coordinate the activities of the NHRI network.

In 1998, rules of procedures were developed for the ICC and its membership was enlarged to 16 members, four from each of the geographical regions. At that same meeting, the ICC resolved to create a process for accrediting institutions.

In 2008, the ICC discussed governance issues, including incorporation of the ICC in order to better cope with the changing environment including the role of NHRIs in the international human rights system. In 2009, the ICC discussed matters related to the Committee's governance working group and the working group on sustainable funding and the Subcommittee on Accreditation; as well as *inter alia* issues related to the implementation of the Nairobi Declaration, the Durban Review Conference and the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights.

The Sub-Committee on Accreditation (SCA) of the ICC has the mandate to review and analyze accreditation applications and to make recommendations to ICC Bureau members on the compliance of applicants with the Paris Principles. The SCA is composed of one "A status" accredited NHRI for each of the four regional groupings; namely Africa, the Americas, the Asia Pacific, and Europe. Members of the SCA are appointed by the regional groupings for a renewable term of three years. OHCHR participates in the work of the SCA as a permanent observer and in its capacity as ICC secretariat.

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8 Paris Principles Resolution, *supra* note 5; Human Rights Resolution 2005/74: National Institution for the Promotion and Protection of Human Rights, 20 Apr., 2005, E/CN.4/RES/2005/74; Rule 7, Rules of Procedure, annexed to HRC Resolution 5/1 on the Institutions Building of the Human Rights Council, 18 Jun., 2007, available at http://www.ohchr.org/en/hrbodies/upr/pages/BackgroundDocuments.aspx; Resolution on the Role of the Ombudsman, Mediator and Other National Human Rights Institutions in the Promotion and Protection of Human Rights, 20 Mar., 2009, A/RES/63/169; National Institutions for the Promotion and Protection of Human Rights, 20 Mar., 2009, A/RES/63/172; National Institutions for the Promotion and Protection of Human Rights, 12 Mar., 2010, A/RES/64/161; Resolution on the Role of the Ombudsman, Mediator and Other National Human Rights Institutions in the Promotion and Protection of Human Rights, 28 Mar., 2011, A/RES/65/207.

As at August 2011, there were 70 NHRIs accredited with A Status by the ICC , i.e. in compliance with the Paris Principles.[9] The ICC[10] is an international, independent body that promotes the establishment and strengthening of NHRIs in conformity with the Paris Principles.

National human rights institutions are State-sponsored and State-funded organizations that nonetheless act independently of the Government to promote and protect human rights at the national level. If they are established in conformity with the Paris Principles, they can have an important and positive impact on their countries' human rights situation.

While all institutions should share basic characteristics with regard to their mandate, responsibilities and authority, there are different models. Increasingly, however, the distinctions between these models are becoming blurred. What is more relevant than the label attached to an institution is the fact that its mandate, functions and powers accord with the letter and the spirit of the Paris Principles.[11] Accordingly, such will form the basis of the discourse in the current article.

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9 The calendar of ICC accreditation reviews (2009-2013) as well as summaries of NHRIs that have undergone accreditation in the past are all available through http://nhri.ohchr.org; The latest reports from the Subcommittee on Accreditation are also available through http://www.nhri.net/default.asp?PID=607&DID=0; Access to the latest Secretary-General's report to the Human Rights Council on the accreditation process is also available: *Secretary General's Report on the Process Currently Utilised by the International Coordinating Committee of National Institutions for the Promotion and Protection of Human Rights to Accredit National Institutions in Compliance with the Paris Principles*, 3 Feb., 2011, A/HRC/16/77.

10 Since 2011, OHCHR maintains the official website of the International Coordinating Committee of National Institutions for the Promotion and Protection of Human Rights (http://nhri.ohchr.org) The site includes global, regional and country information and thematic issues of interest to NHRIs:

11 *National Human Rights Institutions: History, Principles, Roles and Responsibilities* (2010), OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS, http://www.ohchr.org/Documents/Publications/PTS-4Rev1-NHRI_en.pdf; Kristin Hogdahl, *Strengthening NHRIs: The Paris Principles and the ICC Accreditation Systems* (20-22 March, 2012), NATIONAL INSTITUTION UNIT, NORWEGIAN CENTRE FOR HUMAN RIGHTS, http://nhri.ohchr.org/EN/ICC/AnnualMeeting/25/Statementspresentations/ICC%20Accreditation%20-%20Norway.pdf; *The Role of HHRIs in Countries of Transition in the Arab World*, THE DANISH INSTITUTE FOR HUMAN RIGHTS, http://www.humanrights.dk/files/pdf/Publikationer/The%20role%20of%20NHRIs%20in%20the%20countries%20in%20Transition%20in%20the%20Aarab%20world%20EN.pdf; *Final Report of the OSCE Supplementary Human Dimension Meeting On National Human Rights Institutions (Ombudsinstitutions, commissions, institutes and other)* (14-15 Apr., 2011), http://www.osce.org/odihr/78301.

3. AN EMERGING RIGHT

Arguably, a human right to an environment of a particular quality is beginning to emerge. NHRIs may well have a role to play in advocating such a human right to an environment and in supporting its inclusion into national, regional and international human rights frameworks while contributing towards its implementation.

The idea of a human right to environment began with the 1972 Stockholm Declaration.[12] Principle 1describes a 'fundamental right' to 'an environment of a quality that permits a life of dignity and well-being' and a responsibility 'to protect and improve the environment for present and future generations'. This was a remarkably progressive first step: not only is the environment slotted neatly into a human rights framework, it can also be distinguished from traditional human rights because of the obligation to secure the environment for 'future generations'. This is the kind of approach that needs to be encouraged by NHRIs if they wish to make a human right to environment a reality.

Unfortunately, the 1992 Rio Declaration changed the international position on environmental protection. Principle 1declares that: 'Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.'[13] In the words of scholars such as Francesco Francioni: 'This is hardly human rights language.'[14] The change in approach is drastic – environmental protection is no longer framed in terms of a right, and the focus moves to one of sustainable development. This reluctance to use human rights language is likely to have slowed the overall development of an international human right to an environment of a particular quality.

The Johannesburg Declaration confirmed the approach taken in Rio, focusing on sustainable development, rather than environmental

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12 Declaration of the United Nations Conference on the Human Environment, Jun. 16, 1972, U.N. Doc. A/Conf.48/14/Rev. 1 (1973); Francesco Francioni, *International Human Rights in an Environmental Horizon*, EJIL 21 (2010) 41-55, 44. The author argues that 'the confinement of the idea of 'human rights' within an individualistic horizon … remains blind to the intrinsic linkage between the individual and the collective interests of society (hereinafter Francesco Francioni).

13 Rio Declaration on Environment and Development, Aug. 12, 1992, UN Doc. A/CONF.151/26 (vol. I).

14 Susan Glazbrook, *supra* note 1, at 310-311.

protection.[15] This is considered to be the mainstream approach. It is this approach that NHRIs will have to adopt if they wish to advance in their efforts to realize a human right to environment.

There have been certain developments that follow the framework of the Stockholm Declaration much more closely. These developments suggest that a human right to environment is emerging parallel to the mainstream approach described above. NHRIs should pay attention to these developments if they wish to advocate a human right to the environment.

The 1989 Hague Declaration is a case in point. This declaration recognises a responsibility to preserve and protect the environment.[16] The reference it makes to the environment is distinct from the language of 'sustainable development' now more readily employed. A 1990 UNGA Resolution is also significant in this regard. The General Assembly declared that 'a better and healthier environment can help contribute to the full enjoyment of human rights by all'. It also declared that a 'fundamental right' to 'life in an environment of a quality that permits a life of dignity and well-being' does exist, and that there is an obligation 'to protect and improve the environment for present and future generations.'[17]This follows the approach taken by the Stockholm Declaration, placing the environment within a human rights framework.

Finally, a set of Draft Principles on Human Rights and the Environment[18] were drawn up in 1994.It must be noted, however, that such draft principles were drafted by a member of the UN Sub-Commission on Human Rights and not by a formal body of the United Nations system. Nevertheless, these principles provide a useful framework for a potential and emerging human right to the environment. These principles declare that 'Human rights, an ecologically sound environment, sustainable development and peace are interdependent and indivisible' and that 'All persons have the right to a secure, healthy and ecologically sound environment.' The environment is clearly defined as a human right, and the provisions set out in the Stockholm Declaration are 'fleshed out' in the details.

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15 Johannesburg Declaration on Sustainable Development, Sept. 4, 2002, Un Doc. A/CONF.199/20. 2002.

16 Hague Declaration on the Environment, Mar. 11, 1989, 28 ILM 1308.

17 Dec 14, 1990, A/RES/45/94.

18 Draft Principles on Human Rights and the Environment, 1994, E/CN.4/Sub.2/1994.9 Annex I (1994).

The Draft Principles could be used as a valuable guide to NHRIs when they seek to advocate a human right to environment. Overall, it is clear that an alternative approach to that set out in Rio exists, and that steps to progress towards the position in the Stockholm Declaration have been made; however it is unclear, whether such steps have been anything more than 'policy aspirations' or 'symbolic gestures'.[19] Nonetheless, these developments may be utilized by NHRIs as a guide to assess progress towards realization of the human right to environment. NHRIs that take the initiative now have the unique opportunity to set an example, and to influence the development of a human right to the environment not only nationally, but also regionally and internationally.

The Ksentini Report[20] by the UN Special Reporter on Human Rights and the Environment identifies various substantive rights and freedoms such as freedom from pollution and environmental degradation, and the right to the highest attainable standard of health free from environmental harm qualified by exceptions similar to those found in the European Convention on Human Rights[21].

However, whether these are anything more than policy aspirations or symbolic gestures is questionable. It may be opined that while they may guide decision-makers in a general sense, courts are reluctant to require potentially vast sums of money to be spent on environmental improvement works to uphold such rights not least because this might involve protecting the 'first right to get to court' at the expense of others, perhaps more worthy of improvement schemes.

Moreover, there have been several developments at the regional level which illustrate that a right to environment might have already been established[22], namely through the 1988 Protocol of San Salvador[23] – Article 11 (1) which states 'a right to live in a healthy environment and to have

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19 Salma Yusuf, *Pursuing The Right for Today, Securing the Environment for Tomorrow* (May, 2012), available at http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?lng=en&id=145320 (hereinafter Salma Yusuf).

20 *Final Report by Special Rapporteur Fatma Zohra Ksentini: Review of Further Developments in Fields with which the Sub-Commission on Prevention of Discrimination and Protection of Minorities has been Concerned,* 6 Jul., 1994, E/CN.4/Sub.2/1994/9.

21 European Convention for the Protection of Human Rights and Fundamental Freedoms, 4 Nov., 1950, ETS 5 (hereinfter the European Convention on Human Rights).

22 Salma Yusuf, *supra* note 19.

23 Additional Protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights, 17 Nov., 1988, OAS Treaty Series No. 69.

access to public services;' 1981 African Charter on Human and People's Rights[24] – Article 24 which states a 'right to a generally satisfactory environment'; the Convention for the Protection of Human Rights and Fundamental Freedoms, Rome, 1950, European Treaty Series No 5[25]; the African Charter – Communication No 155/96 (Ogoni Case) The Social and Economic Rights Action Center and the Center for Economic and Social Rights v Nigeria[26]; the African Commission on Human and People's Rights, 30th Ordinary Session, October 2001.[27] These are examples of using the language of human rights to promote or consolidate certain social values.[28]

Regional human rights bodies in Europe, the Americas and Africa have all examined cases alleging violations of the right to life due to environmental harm.[29] Apart from receiving and examining individual complaints, the Inter-American Commission on Human Rights devoted particular attention to environmental rights in reports to Ecuador (1997)[30] and Brazil (1997)[31]. The Commission also upheld the procedural dimension of environmental protection through human rights. The cases submitted in the African system invoked the right to health (article 16) rather than the right to environment contained in the same document.[32]

Further, an examination of recent international conventions in the field of environmental law signals the crystallizing of a human right to an

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24 African Charter on Human and Peoples' Rights, 27 Jun., 1981, CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (hereinafter Banjul Charter).

25 The European Convention on Human Rights, supra note 21.

26 The Social and Economic Rights Action Center and the Center for Economic and Social Rights v Nigeria, cited as Communication No. 155/96, 27 May, 2002, available at http://www.escr-net.org/docs/i/404115.

27 *Final Communique of the 30th Ordinary Session of the African Commission on Human and Peoples' Rights*, (13th – 27th Oct., 2001), THE AFRICAN COMMISSION ON HUMAN AND PEOPLES' RIGHTS, http://www.achpr.org/files/sessions/30th/info/communique/achpr30_fincom_2001_eng.pdf, 21 (hereinafter ACHPR Communique).

28 Salma Yusuf, *supra* note 19.

29 Salma Yusuf, *supra* note 19.

30 *Report on the Situation of Human Rights in Ecuador* (1997), INTERN-AMERICAN COMMISSION OF HUMAN RIGHTS, available at http://www.wcl.american.edu/ pub/humright/digest/inter-american/.

31 *Report on the Situation of Human Rights in Brazil* (1997), INTERN-AMERICAN COMMISSION OF HUMAN RIGHTS, available at http://www.wcl.american.edu/pub/ humright/digest/inter-american.

32 Salma Yusuf, *supra* note 19.

environment.[33] The Preamble of the Aarhus Convention[34] expressly states that 'every person has the right to live in an environment adequate to his health and well-being…' The following paragraph adds that to be able to assert this right and observe the duty, citizens must have access to information, be entitled to participate in decision-making and have access to justice in environmental matters. Informational rights are widely found in environmental treaties, in both weak and strong versions.

Other examples are Article 6 of The UN Framework Convention on Climate Change[35]; The Convention on Biological Diversity[36] which similarly does not oblige state parties to provide information, but article 14 provides that each contracting party 'as far as possible and as appropriate' shall introduce 'appropriate' Environmental Impact Assessment procedures and 'where appropriate allow for public participation in such procedures.'

Broader guarantees of public information are found in international instruments including the 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes[37] (article 16); the 1992 Espoo Convention on Environmental Impact Assessment in a Transboundary Context[38] (Article 3 (8)) and the 1992 Paris Convention on the North-East Atlantic[39] in Article 9. Other treaties require state parties to inform the public of specific environmental hazards, and Articles 6 and 13 of the International Atomic Energy Agency Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management[40].

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33 Salma Yusuf, *supra* note 19.

34 UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, 28 Jun., 1998, 2161 UNTS 447 (hereinafter Aarhus Convention).

35 *United Nations Framework Convention on Climate Change, 9 May, 1992, 1771 UNTS 107 (hereinafter United Nations Framework Convention on Climate Change).*

36 Convention on Biological Diversity, 5 Jun., 1992, 1760 UNTS 79 (hereinafter the Convention on Biodiversity).

37 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 17 Mar., 1992, 1936 UNTS 269.

38 Convention on Environmental Impact Assessment in a Transboundary Context, 25 Feb., 1991, 1989 UNTS 310 (hereinafter the Espoo Convention).

39 Convention for the Protection of the Marine Environment of the North-East Atlantic, 22 Sept., 1992, 2354 UNTS 67.

40 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 5 Sept., 1997, available at
http://www.iaea.org/Publications/Documents/Conventions/jointconv.html

International organizations have also begun to play a critical role in recognizing the relationship between human rights and the environment[41] as is reflected by non-binding declarations of a right to environmental information in the World Health Organization's European Charter on Environment and Health[42], The Bangkok Declaration (1990)[43] and the Arab Declaration on Environment and Development and Future Perspectives of September 1991[44]. Further, United Nations human rights texts generally contain a right to freedom of information or a corresponding state duty to inform – Universal Declaration of Human Rights[45] (article 19); the International Convention on Civil and Political Rights[46] (article 19 (2).

Additionally, the United Nations has on several occasions recommended measures in human rights protection which have had implications for environmental protection.[47] Some noteworthy examples are where the UN Human Rights Committee has indicated that state obligation to protect the right to life can require positive measures designed to reduce infant mortality and protect against malnutrition and epidemics implicating environmental protection.[48]

On November 8, 2000, the Committee on ESCR issued General Comment No 14 on 'Substantive Issues Arising in the Implementation of the ICESCR Article 12 – the Committee states in para 4 that 'the right to health embraces a wide range of socio-economic factors that promote conditions in which people can lead a healthy life, and extends to the underlying determinants of health, such as …a healthy environment.'[49]

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41 Salma Yusuf, *supra* note 19.

42 European Charter on Environment and Health, 1989, available at http://www.euro.who.int/__data/assets/pdf_file/0019/114085/ICP_RUD_113.pdf.

43 Bangkok Declaration, Oct., 1990, available at www.apda.jp/en/pdf/declarations/1990 *_Bangkok.pdf.*

44 The **Arab Declaration on Environment and Development and Future Perspectives**, Sept., 1991, cited in Human Rights and the Environment, 2 Jul., 1992, U.N. Doc. E/CN.4/Sub.2/1992/7, 20.

45 *Universal Declaration on Human Rights, 10 Dec., 1948,* UN Doc A/810 at 71 (1948) (hereinafter the UDHR).

46 *International Covenant on Civil and Political Rights, 16 Dec., 1966, 999 UNTS 171 (hereinafter the ICCPR).*

47 Salma Yusuf, *supra* note 19.

48 Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights: ECOSOC General Comment Number 14, 11 Aug., 2004, *E.C.12.2000.4.*

49 *Id.*

The major role played by the public in environmental protection is participation in decision-making, especially in environmental impact or other permitting procedures.[50] Public participation is based on the right of those who may be affected to have a say in the determination of their environmental future.[51] It is noteworthy that this is not restricted to residents but includes foreign citizens as well.[52]

Most recent multilateral and many bilateral agreements contain this – for example, the Framework Convention on Climate Change (Article 4 (1)(i)[53]; the Convention on Biological Diversity (Article 14 (1) (a)[54]; regionally the Espoo Convention on Environmental Impact Assessment in a Transboundary Context.[55] The right to public participation is widely expressed in human rights instruments as part of democratic governance and the rule of law as demonstrated by Article 21 of the UDHR,[56] Article 20 of American Declaration on the Rights and Duties of Man,[57] Article 13 of the African Charter[58] and Article 25 of the ICCPR[59].

4. Protecting The Environment Through Existing Human Rights

The protection of the environment through existing human rights is important to the work of NHRIs in the Asia-Pacific. It avoids the controversial issue of shaping a new human right. Scholars such as Dinah Shelton point out that, although almost all global and regional human rights bodies have considered the link between environmental damage and internationally recognised human rights, 'the complaints brought have not been based upon a specific right to a safe and environmentally-sound environment, but rather upon rights to life, property, health, information,

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50 Salma Yusuf, *supra* note 19.
51 Salma Yusuf, *supra* note 19.
52 Salma Yusuf, *supra* note 19.
53 *United Nations Framework Convention on Climate Change, supra note 35.*
54 Convention on Biodiversity, *supra* note 36.
55 The Espoo Convention, *supra* note 38.
56 *The UDHR, supra note 45.*
57 *American Declaration on the Rights and Duties of Man, 1948,* 43 AJIL Supp. 133 (1949).
58 Banjul Charter, *supra* note 24.
59 *The ICCPR, supra note 46.*

family and home life'.[60] This suggests a clear preference to engage with the environment through existing human rights.

Whilst it is not within the scope of this article to assess the protection of the environment through all existing human rights, the approach taken in relation to some human rights is considered. It is hoped that this will demonstrate to NHRIs how existing human rights can be drawn upon to secure environmental protection, informing the approach they may take to ensure such protection themselves.

4.1 RIGHT TO LIFE

The right to life is a fundamental aspect of customary international law and it is included in several international agreements. The WHO suggests that 'As many as 13 million deaths could be prevented each year by making our environments healthier':[61] This being the case, there is scope for the human right to life to be engaged in environmental protection.

One difficulty is that 'Traditionally the right to life has been interpreted as the right to be free from immediate and arbitrary deprivation of life.'[62] Deprivation of life as a result of environmental damage, by way of contrast, generally takes a lengthy period of time to occur, and can be more difficult to prove.

However, the issue has been considered by the courts, and is worthy of consideration: the Asia-Pacific Forum contends that the Indian courts have been particularly successful in using the right to life to secure environmental protection.[63] Their approach is therefore likely to be useful to demonstrate the type of approach NHRI sought to adopt.

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60 Dinah Shelton, *Human Rights, Health and the Environment: A Background Paper for the World Health Organisation* (2002), http://www.who.int/hhr/Series_1%20%20Sheltonpaper_rev1.pdf.

61 *10 Facts on Preventing Disease through Healthy Environments*, WORLD HEALTH ORGANISATION http://www.who.int/features/factfiles/environmental_health/environmental_health_facts/en/index.html.

62 *Human Rights and the Environment: Final Report and Recommendations* (27 Sept., 2007), ASIA PACIFIC FORUM, http://www.ohchr.org/Documents/Issues/ClimateChange/Submissions/Asia_Pacific_Forum_of_NHRIs_1_HR_and_Environment_ACJ_Report_Recommendations.pdf, 17 (hereinafter the Asia Pacific Forum Report).

63 *Id.*, at 18.

Charan Lal Sahu v Union of India[64] concerned a huge escape of lethal gas, MIC, resulting in the death of approximately 3000 people. Additionally, another several thousand persons were injured, and the environment was polluted, damaging both flora and fauna. The Supreme Court recognised 'the constitutional rights of our people, relating … safety to environment and ecology to enable people to lead a healthy and clean life,'[65] establishing the link between right to life and a safe and clean environment.

The case of *Subhash Kumar v State of Bihar*[66] confirmed this position, holding that: 'Right to life … includes the enjoyment of pollution free water and air for full enjoyment of life'[67] and that 'If anything endangers or impairs that quality of life … a citizen has right to have recourse to Article 32 of the Constitution for removing the pollution of water or air which may be detrimental to the quality of life.'[68] This places positive obligations on the state to address environmental harm, including through the implementation of laws and policies.[69]

Clearly then, an expansive approach to right to life may be employed. It is open to the courts to adopt this approach, and NHRIs should encourage this line of reasoning. Where it is within its remit to refer cases to court, NHRIs should include arguments centred on the right to life – and where they are able to adjudicate on the violation of human rights, they should take an expansive approach, linking environmental protection to the right to life.

4.2 Right to Health

As with right to life, the realization of the right to health is impacted upon by environmental factors – a polluted environment impacts on the health of the people living within it. Again, India provides a useful example: between 1996 and 2000, a series of judgments were made by the Indian Supreme Court in response to health concerns as a result of

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64 1989 SCR Supl. (2) 597.
65 *Id*, at 710-711.
66 1991 SCR (1) 5.
67 *Id.*, at 6.
68 *Id.*, at 6.
69 Johannesburg Declaration on Sustainable Development, 4 Sept., 2002, A/CONF.199/20, 19 (hereinafter the Johannesburg Declaration).

industrial pollution in Delhi.[70] In some of these cases, the Court ordered the closure of plants on the basis of the primary importance of environmental protection, and the health concerns suffered by residents as a result.[71] These then are promising signs taken by the courts and an approach which NHRIs must be encouraged to adopt through advocacy.

4.3 PROCEDURAL RIGHTS

As procedural rights are categorized as 'civil and political rights', they traditionally receive greater protection than other rights groups such as economic, social and cultural rights, or the collective rights of which the right to an environment is classified within. The Asia Pacific Forum recognises three aspects of procedure that are particularly relevant to environmental protection, namely, right to access information; right to participate in decision making; and right to access to justice or remedies.[72] These rights provide a degree of 'transparency' and 'accountability' where the environment is concerned, enabling local residents and indigenous people to access relevant information as and when required.[73]

Regionally, the European Community generally guarantees the right of the individual to be informed about the environmental compatibility of products, manufacturing processes and their effects on the environment and industrial installations[74] and two general directives address rights of information.[75]In the case of Leander v Sweden[76], the applicant alleged violation of Article 10 of ECHR after he was refused access to a file that was used to deny him employment. The court unanimously dismissed the claim stating that 'The right of freedom to receive information basically prohibits a Government from restricting a person from receiving information that others wish or may be willing to impart to him. Article 10

70 *Id.*, at 23.
71 The Johannesburg Declaration, *supra* note 69, at 23.
72 The Johannesburg Declaration, *supra* note 69, at 14.
73 The Johannesburg Declaration, *supra* note 69, at 15.
74 Council Directive Concerning the Quality of Bathing Water, Art. 13, 8 Dec., 1975, 76/160/EEC.
75 Council Directive on the Assessment of the Effects of Certain Private and Public Projects on the Environment, 27 Jun., 1985, 85/337/EEC and Council Directive on The Freedom of Access to Information on the Environment, 7 Jun., 1990, 90/313/EEC replaced in January 2003 by the Directive on Public Access to Environmental Information and Repealing Council Directive 90/313/EEC, 28 Jan., 2003, 2003/4/EEC as a consequence of the adoption of the Aarhus Convention, *supra* note 34.
76 LEANDER V. SWEDEN, (1987) 9 EHRR 433.

does not…confer on the individual a right of access to a register containing information on his personal position, nor does it embody an obligation on the Government to impart such information to the individual.' Thus it appears that this restrictive approach by the ECTHR construes 'right' narrowly by finding the Government liable only if it obstructs or hinders a person from receiving information. It does not require a proactively responsible role for the Government in providing information to its citizens.

The ECTHR has applied its restrictive approach to environmental cases. The approach of the ECTHR can be contrasted with the views of the former Commission which adopted a broader approach including the right of the individual to receive information not generally accessible and that is of particular importance to him/her. In Guerra v Italy[77], the European Commission on Human Rights (ECOMHR) admitted the complaint insofar as there was a violation of a right to information but did not accept the claim of pollution damage. The ECOMHR concluded that Article 10 imposes on States an obligation not only to disclose to the public available information on the environment but also the positive duty to collect, collate and disseminate information which would not otherwise be directly accessible to the public or brought to the public's attention. It acknowledged a fundamental right to information, at least in Europe, concerning activities that are dangerous for the environment or human well-being.

However, in 1998, the ECTHR reversed the expanded reading of Article 10 by ECOMHR and reaffirmed its earlier position, but unanimously found a violation of Article 8. It is noteworthy that the ECTHR adopted a more liberal approach to cases concerning freedom of press where the court held that the state may not extend defamation laws to restrict dissemination of environmental information of public interest.[78] In Bladet Troms V Norway[79], the court said otherwise the press' public watchdog role could be undermined. The court went further in the case of Thoma v Luxembourg[80] saying that when criticizing public officials and not private individuals a degree of exaggeration or even provocation is allowed when it is proportionate to the legitimate aim pursued and with sufficient

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77 GUERRA V. ITALY, (1998) 26 EHRR 357.

78 Salma Yusuf, *supra* note 19.

79 Case of Blader Tromso and Stensaas v Norway, [1999] ECHR 29.

80 Case of Thoma v Luxembourg, (2003) 36 EHRR 21.

reason given its necessity for the functioning of a democratic society and is in the general interest.[81]

Article 6 of the ECHR guarantees a fair and public hearing before a tribunal for the determination of rights and duties. In Oerlemans v Netherlands,[82] Article 6 was deemed to apply to a case where a Dutch citizen could not challenge a ministerial order designating his land as a protected site. Similarly, the applicability of Article 6 was upheld in Zander v Sweden[83]. Further, the right to remedy was held to extend to compensation for pollution under Article 6 in Zimmermann v Switzerland[84] where the ECTHR found Article 6 applicable to a complaint about the length of the proceedings for compensation for injury caused by noise and air pollution from a nearby airport.

The human rights discussed are not the only rights that may be used to secure environmental protection. For example, the right to an adequate standard of living and rights relating to the protection of minorities are also relevant. When addressing environmental matters, NHRIs ought to be receptive to consider if *any* existing human right may be used to secure environmental protection and thereby sustainable development.

5. National Human Rights Institutions: A Focus On The Asia – Pacific

5.1 Australian Human Rights and Equality Commission

The Australian Human Rights and Equality Commission (HREOC) has relatively advanced environmental protection policies. It is empowered to investigate complaints about human rights breaches; hold enquiries into nationally important human rights issues; develop human rights education programmes; provide independent advice to courts on human rights principles; provide policy advice and submissions to governments and parliaments; and to undertake other research into human rights issues.[85] In the absence of a national human rights instrument in

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81 Salma Yusuf, *supra* note 19.

82 Case of Orleans V Netherlands, [1991] ECHR 52.

83 Case of Zander v Sweden, [1993] IIHRL 103.

84 Case of Zimmermann v Switzerland, (1984) 6 EHRR 17.

85 *Functions of the Australian Human Rights Commission,* http://www.hreoc.gov.au/about/functions/index.html.

Australia, the Australian NHRI must and does play an important role in promoting a human rights approach to environmental protection.

The HREOC issued a background paper on human rights and climate change in 2008.[86] The paper makes it clear from the outset that the HREOC believes a human rights based approach to climate change is required.[87] It argues that such an approach requires a framework which is '*normatively* based on international human rights standards'; and '*practically* directed to promoting and protecting human rights'.[88] It goes further to suggest that a human rights based approach will be advantageous to environmental protection through fostering accountability and transparency; a focus on minorities; and the encouragement of democratic processes.[89] Such an approach is illustrative of the fact that the HREOC is presently actively involved in advocating that the link between human rights and the environment be fully explored. The work of the HREOC is therefore capable of providing other NHRIs with a suggestive blue print of an approach that can be taken towards environmental protection.

A useful aspect of the HREOC's paper is its analysis of the environmental protection measures already taken by the Australian government, from a human rights perspective. The HREOC acknowledges that Australia has introduced many positive measures to secure environmental protection, but is critical that the reasons behind this have primarily been economic.[90] The paper argues that 'decision-makers should be guided by the core minimum human rights standards' when determining their policies.[91] This open criticism demonstrates what is needed from NHRIs in the Asia-Pacific to bring the human rights implications of environmental policy to the forefront of policy-makers' agenda, and duly exerting pressure on the decision-makers to act accordingly.

The paper moves on to consider the impact of climate change and policy on marginalised groups within society. The HREOC argues that a

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86 *Background Paper: Human Rights and Climate Change* (2008), AUSTRALIAN HUMAN RIGHTS AND EQUALITY COMMISSION, http://www.humanrights.gov.au/papers-human-rights-and-climate-change-background-paper (hereinafter Human Rights and Equality Commission Background Paper).

87 *Id*, at 2.

88 Human Rights and Equality Commission Background Paper, *supra* note 86, at 12.

89 Human Rights and Equality Commission Background Paper, *supra* note 86.

90 Human Rights and Equality Commission Background Paper, *supra* note 86, at 14.

91 Human Rights and Equality Commission Background Paper, *supra* note 86.

purely economic approach to climate policy may lead to members of such groups being further neglected; however a human rights based approach requiring '*transparent and participatory* decision-making, implementation, monitoring and evaluation' would oblige the decision-maker to ensure that all affected groups could take part in the decision-making process.[92]

HREOC further considers the impact of environmental policy on minorities in another report, which is critical that 'governments [in Australia] continue to develop indigenous land policy in isolation from other social and economic areas of policy.'[93] This demonstrates that, minority groups rely on NHRIs, as well as NGOs, to provide them a voice and to secure their interests. Here then is another critical intervention point that NHRIs in the region and more generally need to bring to bear in their work. Work plans and policies of NHRIs must incorporate activities which focus on protection of impacts of environmental concerns on marginalized sections of society.

Overseas environmental policy is also considered by HREOC: it argues that a human rights based approach should continue to be taken in this context.[94] This is significant because it recognises that environmental protection is a global issue. It also demonstrates how far NHRIs have the potential to reach: HREOC is not only advocating for a rights-based approach to the environment *within Australia*, it is also advocating a rights-based approach to the environment internationally. This demonstrates that NHRIs can make a substantial contribution to the development of international environmental policy – if the Australian government is willing to take on board the HREOC's advocacy, then its policies may act as a progressive example to other states, moving the international approach in a similar direction.

Finally, the background paper considers disaster management and environmental refugees. These are also issues with an international dimension although in a country the size of Australia, there is a possibility for domestic occurrence too. It notes that, 'Australia's vulnerability to national disasters has increased significantly as a result of global warming'

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92 Human Rights and Equality Commission Background Paper, *supra* note 86, at 15.

93 *Native Title Report* (2008), AUSTRALIAN HUMAN RIGHTS AND EQUALITY COMMISSION, http://www.humanrights.gov.au/publications/native-title-report-2008, 115 (hereinafter Native Title Report).

94 Commission on Human Rights Resolution on National Institutions for the Promotion of Human Rights, 9 Mar., 1993, E/CN.4/RES/1993/55.

but also that 'For developing countries, the impact of climate change-induced natural disasters is likely to be much more severe and long-term.'[95]

In relation to environmental refugees, it is considered that 'One of the most significant impacts of climate change … will be the migration of people, not only within the boundaries of their countries, but across borders and across oceans.'[96] The global nature of environmental issues is recognised, and HREOC argues that:

> 'The development of solutions at the international level will inevitably take time, and in the interim it will be necessary to formulate domestic laws to respond to the issue of climate-induced migration.'[97]

This then is an approach that can and will influence international policy in the realm of environmental protection: NHRIs should not sit back and wait for others to take the initiative. Similar but innovative approaches to HREOC's should be adopted by other NHRIs in the Asia Pacific region too.

The recommendations made in HREOC's paper are also included in a submission made to the Australia 2020 Summit.[98] This submission recommends that the Australian government take action to ensure that adaptation methods are embraced, disaster relief is planned and the issue of 'climate change refugees' is addressed.

HREOC maintains that the government should be careful to ensure that any actions taken in response to climate change do not disproportionately impact on disadvantaged groups within society. By making these recommendations directly to the Australian government, it is clear that HREOC is taking the opportunity to advocate change and influence policy. Its submissions, if taken seriously by the government, may well be put into practice.

The preceding discussion reveals that the HREOC provides a valuable example of the role NHRIs can play in securing environmental protection. If a rights-based approach to protection of the environment is taken, then several environmental matters become relevant to NHRIs.

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95 ACHPR Communique, *supra* note 27, at 21.
96 *Id,* at 21.
97 ACHPR Communique, *supra* note 27, at 23.
98 *Submission of the Human Rights and Equal Opportunities Commission to the Australia 2020 Summit* (Apr., 2008), THE HUMAN RIGHTS AND EQUAL OPPORTUNITIES COMMISSION, http://www.humanrights.gov.au/submission-australia-2020-summit.

HREOC's advocacy of these issues may have played a role in advancing Australia's position on environmental protection thus far; however, human rights based protection for the environment in Australia remains wanting.

It has been suggested that a new 'human rights act' would be useful 'to ensure that the potential human rights consequences of decisions are given consideration';[99] it has also been argued that the role of NHRIs within Australia should be expanded.[100] This does not detract from the fact that the HREOC has taken the lead in the aspect of environmental protection in the Asia-Pacific region.

5.2 National Human Rights Commission of India

The National Human Rights Commission of India (NHRCI) is an important example because it has to work in a context that undergoing rapid socio-economic development at present.[101] Consequently, it is likely that such a context will make it particularly difficult for the country to cope with the impacts of climate change. NHRCI is permitted to: enquire into complaints about human rights violations; intervene in proceedings involving allegations of human rights abuse; review constitutional safeguards for human rights and make recommendations about their implementation; research human rights issues; and consider international human rights instruments.[102]

Hence, there exists ample space available to NHRCI to promote environmental protection through human rights. NHRCI made some progress in this regard. A report into economic and social rights that was conducted on behalf of the NHRCI is worthy of consideration.[103] Although this report focuses on economic, social and cultural rights generally, it

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99 *Protection of Human Rights and Environmental Rights in Australia* (May 21, 2012), ENVIRONMENTAL DEFENDERS OFFICE, http://www.edo.org.au/edonsw/site/pdf/subs/090521hreraust.pdf, 21.

100 *Human Rights in the Asia Pacific: Australia's Role and Responsibilities*, HUMAN RIGHTS LAW RESOURCE CENTRE, http://www.hrlc.org.au/files/Policy-Paper-Asia-Pacific-and-Human-Rights1.pdf.

101 *The State of Asian Cities 2010/11*, UN ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC and THE UN HUMAN SETTLEMENT PROGRAMME, www.unhabitat.org/pmss/getElectronicVersion.aspx?nr=3078&alt=1, 166.

102 The Protection of Human Rights Act, 1993, Act No. 10 of 1994 §12 (1994).

103 *Economic, Social and Cultural Rights: A Study to Assess the Realisation of Economic, Social and Cultural Rights in India* (Mar., 2008), NATIONAL CENTRE FOR ADVOCACY STUDIES, http://www.ncasindia.org/sites/default/files/Economic_Social_Cultural_Rights.pdf (hereinafter the NCAS Report).

recognises a link between the environment and securing protection for these rights, particularly the right to health. Such an approach is commendable as the recognition that the environment is linked to other human rights issues means that NHRCI has scope to get involved in securing environmental protection.

In deliberation of India's protection of the right to health, the report links to 'The human right to a safe and healthy environment' and 'The human right of the child to an environment appropriate for physical and mental development'.[104] The report is critical that, whilst economic factors are usually cited as reasons for the government not meeting its socio-economic obligations, this is more a result of 'lack of political will' and 'inappropriate policy decisions'.[105] Logically following from the preceding conclusion, it can be safely assumed that this applies to insufficient protection of the environment as well. However, the report does not give the environment the full attention it deserves: a number of 'major constraints facing the health sector' in India are listed,[106] but the environment is not one of them. Given the major effects that the environment can have on health, this then is notable oversight. Yet another omission in the report is the failure to consider the environment in relation to the right to food;[107] however such may be due to the fact that India produces more food than is needed to feed its population: difficulties are therefore more a result of uneven distribution than environmental considerations.

The above suggests that, although NHRCI recognises the importance of the environment to human rights issues, much more could be done. Another NHRCI commissioned report entitled 'Dependency on Forests for Livelihoods and Its Impact on Environment – A Case of the Baiga Tribe of Mandla District, Madhya Pradesh'[108] also suggests this. The report concludes that land based activities reduce dependency on forests and that a viable and sustainable model of agriculture is necessary;[109] however, there is no detailed consideration of the human rights elements of the environment, suggesting these are a 'side issue', rather than a key concern.

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104 *Id,* at 66.
105 The NCAS Report, *supra* note 103, at 68.
106 The NCAS Report, *supra* note 103, at 68.
107 The NCAS Report, *supra* note 103, at 103-123.
108 *Completed Research Studies,* http://nhrc.nic.in/research_completed.htm.
109 *Id.*

Overall, NHCRI recognises the relevance of the environment to human rights issues, and has been willing to address this aspect when commissioning reports. More recently, NHCRI has taken action following allegations that the Aami River has been polluted by nearby factories and industrial units.[110] NHCRI has been clear that, if true, these allegations amount to serious human rights violations. Apart from the above, criticisms remain to be made on NHCRI's approach: in contrast to the Australian HREOC, there currently appears to be no overarching environmental policy adopted by NHRCI. This is a gap that needs to be addressed. Developing such a policy will enable the NHRIC to build on the positive work it has begun while helping influence environmental policy both nationally and regionally.

5.3 HUMAN RIGHTS COMMISSION OF MALAYSIA

The Human Rights Commission of Malaysia (HRCM) is permitted to undertake research into human rights issues; promote awareness of human rights; advise the government of complaints against them, and the appropriate action to take in relation to these; study violations of human rights; issue public statements on human rights; and engage in other issues as necessary.[111]

In many respects, HRCM takes a similar approach to that adopted in India, recognising the link between human rights and environmental protection, but not engaging the issue as fully as it bears the potential to. For instance, the HRCM examined the Millennium Development Goals from a human rights perspective, and in doing so linked economic and social rights to the achievement of Goal 7 which is to ensure environmental stability.[112]

The rights particularly noted are health, specifically in terms of access to safe drinking water and adequate housing with reference to slum dwellers. Thus, a link between human rights and the environment has been established, and there is potential for this to be built upon.

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110 *NHRC notices to Uttar Pradesh Government and the Centre over allegations of polluted water in Aami river near Gorakhpur* (Jul. 12, 2012), http://nhrc.nic.in/disparchive.asp?fno=2613.

111 *Fungsi & Kuasa,* http://www.suhakam.org.my/info/jawatan.

112 *A Human-Rights Perspective on MDGs and Beyond* (2006), HUMAN RIGHTS COMMISSION OF MALAYSIA and THE UNITED NATIONS DEVELOPMENT PROGRAMME, http://www.undp.org.my/uploads/Human_Rights_Perspective_on_MDGs.pdf, 33.

The HRCM has also noted a more general link between the environment and access to clean water, although it bears relevance for the requirement to meet Goal 7.[113] The HRCM recommends that a human rights based approach to development should be introduced. This is a positive step, although ideally a human rights based approach to the environment generally should also be advocated.

The HRCM has also done some investigation work into possible breaches of human rights and the environment. Notably, the HRCM carried out an investigation into the Muram Dam in Sarawak. It aimed to identify the impact of the dam on its surrounding environment.[114] HRCM noted particular concerns about the lack of consultation about the dam, the difficulties it experienced in accessing the Environmental Impact Assessment report, and the impact on customary land rights of natives.[115]

The HRCM has taken significant steps towards linking human rights and the environment; however at present it is difficult to establish any overarching approach to environmental protection attributable to the HRCM. This then in a gap that needs to be addressed with urgency. Such will help HRCM establish human rights principles in relation to the environment – and to influence policy in this area. If HRCM needs guidance on advocating environmental issues, it could consider the work of organization such as Friends of the Earth Malaysia.[116] Although HRCM will require a greater focus on human rights issues than an NGO, the approach taken by the Friends of the Earth Malaysia office can be a useful example for consideration.

5.4 COMMISSION ON HUMAN RIGHTS IN THE PHILIPPINES

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113 *Roundtable Discussion on Sustainable Access to Clean Water in Sarawak* (Jan. 28, 2010), HUMAN RIGHTS COMMISSION OF MALAYSIA, http://www.suhakam.org.my/c/document_library/get_file?p_l_id=35723&folderId=138086&name=DLFE-7305.pdf.

114 *Report to the 15th Annual Meeting of the Asia Pacific Forum of National Human Rights Institutions* (Aug., 2010), HUMAN RIGHTS COMMISSION OF MALAYSIA, http://www.asiapacificforum.net/members/full-members/malaysia/downloads/apf-annual-meetings/Malaysia.doc/view, 6.

115 *Id.*

116 See, for example, *Malaysia: Mobilising National and Local Action on Climate Change,* FRIENDS OF THE EARTH INTERNATIONAL, http://www.foei.org/en/resources/publications/ annual-report/2008/what-we-achieved-in-2008/member-groups/asia-pacific-oceania/malaysia-mobilizing-national-and-local-action-on/?searchterm=malaysia:%20mobilizing%20national%20and%20local%20action%20on%20climate%20change.

The Commission on Human Rights in the Philippines (CHRP) is mandated to advise the government of Philippines on human rights protection standards; monitor existing laws and policies; work alongside civil society; and assist the victims of human rights violations.[117] There is therefore scope to engage with the human rights aspects of environmental protection for the CHRP.A notable aspect of the mandate of the CHRP is that it does not possess any powers of adjudication.[118] The lack of authority of enforcement can be a drawback for the work of the CHRP, although it does have some powers to provide compensation to victims.[119]

A particularly relevant aspect of CHRP's work is its Special Programme on the Right to Development. Two of the four aims of this programme are: to create an enabling environment for sustainable human development; and to ensure environmental sustainability.[120] The programme is important because it demonstrates that the CHRP recognises the link between human rights and the environment, and is willing to take the relevant action. It is unclear how successful the special programme has been to date; however the lack of available resources suggests that substantial work remains to be done.

It follows that the CHRP needs to further develop its approach to environmental protection. Such will not be an easy task given that the CHRP only possesses powers to perform an advisory role. That said, it is still possible for CHRP to develop a standardized approach to human rights and the environment, which it can then apply when giving human rights advice across its remit. For instance, the Supreme Court of the Philippines has recognised that the right to a healthful ecology is not only actionable, but can be enforced on behalf of future generations.[121] There is no reason why the CHRP cannot adopt such an approach through its work too. Such

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117 *Roles and Commitments of the Commission on Human Rights of the Philippines*, http://www.chr.gov.ph/MAIN%20PAGES/about%20us/05roles_and_commit.htm.

118 Keith Richard and Damian Mariano, *The Commission on Human Rights of the Philippines (CHRP)* (2010), *available at* http://www.docseek.net/mvwsur/commission-on-human-rights-of-the-philippines.html, 10.

119 *National Human Rights Institutions: an overview of the Asia Pacific Region*, 7 INTERNATIONAL JOURNAL ON MINORITY AND GROUP RIGHTS 207-278 (2000), 235-236.

120 *Special Programs: The Right to Development Program*, http://www.chr.gov.ph/MAIN%20PAGES/services/special_progs2.htm.

121 Minors Oposa v Secretary of the Department of Environment and Natural Resources, discussed in Marissa Leigh Hughes, *Indigenous Rights in the Philippines: Exploring the Intersection of Cultural Identity, Environment, and Development*, 13 GEORGETOWN ENVIRONMENTAL LAW REVIEW 3 (2001), 6.

an endeavour must commence immediately so as to enable the CHRP to develop policy and increase its influence in this area.

5.5 NATIONAL HUMAN RIGHTS COMMISSION OF SRI LANKA

The National Human Rights Commission of Sri Lanka (NHRCSL) is empowered to investigate complaints about procedures and policies in violation of fundamental rights; advise and assist the government in forming rights-compliant legislation; make recommendations to the government regarding both national and international instruments; and increase awareness of human rights issues.[122] It is mandated to assist with the protection and promotion of all universally recognised human rights norms, but there is a special emphasis on rights contained in the Sri Lanka Constitution.[123] These rights primarily fall within the 'civil and political' rights category.

The link between human rights and the environment within NHRCSL's policies and publications is not forthcoming. This could be a result of the lack of economic and social rights contained in Sri Lanka's constitution, or it could be because the NHRCSL has had less time to develop its environmental policies than the other NHRIs considered. This does not necessarily place NHRCSL in bad light given that 'Sri Lanka's turbulent history has actually meant that the nation has a greater opportunity to position itself as a sustainable economy as opposed to many other rapidly developing Asian countries.'[124] This is because the conflict in Sri Lanka put development on hold, with the unintended consequence of keeping the environment sustainable. For NHRCSL, this means that it does not have to advocate changing an existing policy that may be aiding economic development, but harming the environment – instead, it can advocate a new environmentally sustainable policy from the outset. This should be done as soon as practicable.

It is recommended that NHRCSL takes action to develop a standard policy on the environment and human rights. It could begin by conducting an investigation into how the environment can interlink with

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122 Human Rights Commission of Sri Lanka Act, No. 21 of 1996 §10 (1996).

123 *See* CONST. OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA, *Chapter III.*

124 *Sri Lanka Strategy for Sustainable Development* (Feb., 2007), MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES, http://www.rrcap.ait.asia/nsds/uploadedfiles/file/sa/sl/srilanka%20nsds%20report/SL-SDS%20report.pdf

the human rights it already addresses – and it could adopt principles from such an investigation which may be applied to all future human rights and environment issues. This would put it at least 'on par' with other NHRIs within the Asia-Pacific region, and perhaps even ahead of those that have considered the environment as a side issue, but have not yet adopted universally applied policies.

6. Recommendations And Ways Forward

The foregoing examination of work currently undertaken by NHRIs in the Asia-Pacific region reveals varying degrees of engagement with a human rights based approach to environmental protection. For example, the Australian Commission on Equality and Human Rights has a well-established policy, whilst the National Human Rights Commission of Sri Lanka makes little mention of the environment.

Each of the NHRIs examined has scope to improve within the already designated framework of action laid down by the Paris Principles. Contributing to environmental protection within the already established framework of the Paris Principles carries merit since the capacity and legitimacy of NHRIs in engaging in specific activities will not be contested for the most part.

6.1 Development Of Environmental Policies

If NHRIs are to increase their involvement in environmental issues, they need to be clear about where they stand in this regard. All relevant NHRIs should examine the relationship between the environment and the rights they traditionally promote and protect. Thereafter, they should draw up policy guidelines to be applied to all national plans and programmes that have implications for the environment. Essentially, two sets of policy frameworks ought to be formulated: the first set to guide the direction, mission and vision of the NHRI itself in respect of matters having repercussions for the environment, and a second set to be mainstreamed into state approval processes for initiatives to be undertaken by government, non-government and private sectors.

6.2 Lobby Government On Environmental Rights

NHRIs should seek to exert pressure on their respective governments to adopt policies that secure environmental sustainability without violating other human rights norms, principles and laws. As the

preceding discussion reveals, NHRIs in India and Australia particularly, need to include safeguards against the promotion of economic development at the expense of human rights.

It is suggested that NHRIs should encourage their respective governments to introduce an overarching 'right to environment', enforceable through the courts. Whilst there is no international agreement on the content of such a right or even on its existence, NHRIs willing go this distance have the opportunity to significantly influence the law in this area by initiating appeals on the basis of public interest litigation. Moreover, NHRIs could play a significant role in shaping the content accorded to a human right to an environment through its work and call for the justiciability of the right to an environment when adverse impacts of a violation are experienced by its stakeholders.

6.3 Refer Environmental Cases To National Courts

Any policies developed on human rights and the environment will only be beneficial if they are enforced. It is therefore imperative that NHRIs are able to refer cases to respective national courts, whether the case attempts to enforce environmental rights through existing human rights frameworks, or through an established separate 'right to environment.'

6.4 Develop Education Programmes On Human Rights And The Environment

NHRIs should develop national education programmes on human rights and the environment. These programmes may include printed materials, seminars and workshops with the aim of increasing awareness on the link between human rights and the environment. Such programmes must ideally target both practitioners, and members of the public. A successful education programme on human rights and the environment will help intensify the influence of NHRIs in this area.

7. Conclusion

The recommendations laid down in the preceding section must be strengthened through the legitimacy accorded and the spirit set out in the Paris Principles. NHRIs within the Asia-Pacific should explore options

available and act as they deem fit to promote the environmental policies they eventually seek to establish.

It should be remembered that NHRIs can only act as far as their remit permits: even NHRIs with the best intentions can be limited by respective national governments. That said, there is scope for every NHRI examined to increase their involvement within their existing legally mandated remit.

While NHRIs are capable of direct impact on national policies, they may be able to indirectly influence policies at the international and regional level. A regional body to coordinate efforts and guide the policies of NHRIs in the Asia-Pacific must be considered sooner rather than later.

IMPACTS OF OVERLAPPING PROTECTED AREAS ON POVERTY ALLEVIATION: A CASE STUDY OF THE THREE-PARALLEL RIVERS AREA

Wang Huanhuan [*] *Qin Tianbao* [**]

Abstract

Overlap of protected Areas happens here and there in China. Overlapping protected areas increase the costs and decrease the benefit of protected areas to rural people. In most of the case, it worsens poverty of local people. As a typical area of overlapping protected areas and extreme poverty, the Three-parallel Rivers Area of Yunnan Province in China is a good case in point. Legal and institutional defaults and exclusion of local participation caused by overlapping protected areas lead to more poverty thereby environmental damages. Therefore, legislation reform and institutional design including ecological compensation, community co-management, and benefit-sharing in terms of ecological resources and traditional knowledge should be introduced when alleviating poverty caused by overlap of protected areas.

1. PROTECTED AREAS (PAS) AND POVERTY ALLEVIATION (PA)

The primary goal of most protected areas is to conserve biological diversity and provide ecosystem service, not to reduce poverty.[1] They should not exist as island, divorced from the social, cultural and economic context in which they are located.[2] With the geographical overlapping of

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1 Lea M. Scherl *et al.*, *Can protected areas Contribute to poverty Reduction? Opportunities and Limitations* (3 Nov., 2004), THE WORLD CONSERVATION UNION (hereinafter IUCN), http://data.iucn.org/dbtw-wpd/edocs/2004-047.pdf.

2 Recommendation 5.29 of the *Reccommendations of the Vth IUCN World Parks Congress* (24 Mar., 2005), IUCN, http://data.iucn.org/dbtw-wpd/edocs/2004-047.pdf.

protected areas and poverty[3] and complex interaction in between, poverty reduction has become a necessity in terms of protected area and its operation. Otherwise, many protected areas will come under increasing threat.[4]

1.1 WHY SHOULD WE FOCUS ON PAS-PA NEXUS?

Examining the linkage between protected areas and the issue of poverty alleviation has become a theoretical and practical necessity.

One point comes from environmental justice. As stated by Recommendation 5.92 of the 5th WPC: "Protected areas generate significant economic, environmental and social benefits; these benefits are realized at local, national and global levels. Unfortunately, a disproportionate amount of the costs of protected areas are borne locally." This is an infringement of environment justice. More importantly, compared with luxury goods, i.e., ecosystem services enjoyed by others, what local people lose is the right to existence. Alleviating poverty of local people (including those who live in and around protected areas) can adjust the right distribution and set us on a path characterized with environmental justice.

While the other lies in the requirement of sustainable development. In order to achieve the dynamic goal called sustainable development, interaction model among different dimensions including economy, society, culture and ecology regarding PAs should be continuously adjusted. Also, poverty results from multiple factors of economy, society and environment. Poverty alleviation thus becomes a great importance concerning ecological conservation, economic advancement and social development within PAs and local communities.

1.2 LEGAL JUSTIFICATION OF PAS-PA NEXUS

The PAs-PA nexus has been gradually recognized by many international environment law documents. *Stockholm Declaration* in 1972

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3 Protected areas are often located in remote areas, where industrial civilization doesn't prevail and local residents often are kept out of the mainstream economy. It is a common phenomenon around the world.

4 Nigel Dudley et al., *Challenges for protected areas in the 21st Century.* In: *Partnerships for Protection: New Challenges for Planning and Management for protected areas,* SUE STOLTON and NIGEL DUDLEY (ed.), PARTNERSHIPS FOR PROTECTION: NEW STRATEGIES FOR PLANNING AND MANAGEMENT OF PROTECTED AREAS 3-12 (1st ed. 1999).

points out that the protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world.[5] From then on, the PAs-PA linkage had been a hot topic and became even more controversial after the 1992 Rio-De-Janeiro conference.[6] The Convention on Biodiversity Diversity, adopted at the Earth Summit recognizing in its preamble that "economic and social development and poverty eradication are the first and overriding priorities of developing countries."[7] Article 8 of the convention requires countries to promote efforts to support "environmentally sound and sustainable development in areas adjacent to protected areas, with a view to furthering protection of these areas" [8] This provides a legislative justification to link poverty alleviation and *in situ* conservation, as well as an acknowledgement that poverty may threaten the maintenance of protected areas. Consequently, *2010 Biodiversity Target* and World Summit on sustainable development integrate poverty alleviation into biodiversity protection framework.

In general, a basic requirement conveyed by these international legal norms is that establishment and management of protected areas should at least not make the living conditions of local people worsen off ("at least do no harm"), but contribute sustainable development in these regions.

1.3 WHAT IS PAS-PA NEXUS?

We cannot deny that there are some inherent connections between protected areas and poverty alleviation. What are they? Do protected areas aggravate or alleviate poverty? We need to consider both the positive and negative aspects of the influence that exerted on poverty by protect areas. Poverty is a multi-faceted concept involving several economic and social dimensions with mutual influences, thus economy won't be the only indicator within the text.

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5 Declaration of the United Nations Conference on the Human Environment, Article 2, Jun. 16, 1972, U.N. Doc. A/Conf.48/14/Rev. 1 (1973)

6 *Linking Poverty Reduction and Environmental Management: Policy Challenges and Opportunities* (Jul., 2002), DEPARTMENT FOR INTERNATIONAL DEVELOPMENT, DIRECTORATE GENERAL FOR DEVELOPMENT OF EUROPEAN COMMISSION, UNITED NATIONS DEVELOPMENT PROGRAMME AND THE WORLD BANK, http://www.unpei.org/PDF/Linking-poverty-red-env.pdf.

7 Convention on Biological Diversity, Preamble, 5 Jun., 1992, 1760 UNTS 79 (herinafter the CBD).

8 Article 8(e), the CBD, *ibid.*

1.3.1 Negative impact

There isn't any direct causal links between protected areas and poverty, and we would rather say that the latter one is an outcome of comprehensive historical geographic, social and economic factors. However, under formed condition, protected area can indeed pose potential extra costs to local people.

Protected areas are usually located in remote areas with low agricultural productivity, inferior marketization level and marginalized society which in all determine that rural poor there rely directly on ecosystem services such as water, fuel, and food. However, acquiring natural resources from protected areas, which are geographical region established for certain protection objection with defined border, are strictly restrained or prohibited. This results in the broken link between local people and natural resources on which they are largely dependent to sustain their livelihood. Without any alleviation measures introduced, poverty will worsen off as a result. Thus, it is the aim of relevant legal system to interiorize biodiversity value and allocate protection cost-benefit equally at regional, national and international level.

1.3.2 Positive impact

Protected areas can provide a wide range of ecological productions and services to residents live in and around and to the whole society. *The millennium Ecosystem Assessment* divides them into four categories: **provisioning service** includes the services that yield natural products such as food, fresh water, fuel wood and herbal medicines that have direct use-value to rural communities; **regulating service**, such as benefits from ecosystem services such as climate regulation, watershed protection, costal protection, water purification, carbon sequestration, and pollination; **cultural service**, including religious values, tourism, education, and cultural heritage; **supporting service,** for example, soil formation, nutrient cycling and primary production. [9] It is easier to draw a conclusion that protection of environment and ecosystem can bring about cleaner water, more fertile soil and greater capability to resist natural disaster.

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9 Joseph Alcamo et al., *Ecosystems and Human Well-being: A Framework for Assessment* (2003), WORKING GROUP OF THE MILLENNIUM ECOSYSTEM ASSESSMENT, 3-6.

1.3.3 Retroaction of poverty on PAs

Greater pressure will be exerted on protected areas and serious ecological degradation follows unless poverty can be reduced. And this is what happens to many protected areas around the world. The establishment of protected areas changes the living style of local communities, and the primary occupation and utilization of land, water and other resources are challenged. In order to survive, they risk breaking law and getting prosecuted to obtain living resources from protected areas or to convert protected land to crops.

Recognizing the complex linkage between protected areas and poverty alleviation, we can reach a conclusion that protected areas could generate long-term and indirect benefits while short-term and direct costs to local communities and people in them. Conversely, poverty definitely does no good to establishment and management of protected areas. Therefore, it is of great importance to pay enough attention to poverty of local communities and people in and around protected areas, restrain the negative impacts, and promote the positive ones or "at least do no harm".

2. OVERLAPPING PROTECTED AREAS AND POVERTY ALLEVIATION: A CASE STUDY OF THREE-PARALLEL RIVERS AREAS IN CHINA

Protected areas[10] is "an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means." Protected areas are of many types, established with widely different objectives, and designated by many different names even within a country. Generally, one area, such as biodiversity hotspots with good natural scenery, abundant natural resources as well as geological features to name a few, could be dedicated into different protected areas categories and this results in overlap of protected areas which is always overlooked. Although uniform categories emerge now and then, such as the famous IUCN category, no one can guarantee that they could be adopted all over the world. Actually about two-thirds of the world's protected areas have

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10 "Protected area" in this paper is a overarching concept consist of all kinds of designated areas for certain protection purpose including natural reserve (actually we call it protected area in current legal documents in China), scenic areas, forest park, geological park and so forth.

now been assigned an IUCN management category, while 33.4% remain uncategorized.[11] Unfortunately protected areas in China can be included into that 33.4%. Three-parallel Rivers Area is a typical area where overlap of protected areas coexists with extreme poverty in China. Analyzing the overlap condition, poverty condition and interaction between them with legal perspective can throw light on how overlap protected areas influence poverty alleviation.

2.1 Overlap of Three-parallel Rivers Areas

Three-parallel Rivers Area is suited in south-west China, Yunnan province. (98°-100°31′ E, 25°30′ -29°N), Three great rivers of Asia Yangtze (Jinsha), Mekong (Lancang) and Salween (Nujang) River, run roughly parallel, north to south, through steep gorges. The site, which is 41,000 square kilometer large, is an epicenter of Chinese biodiversity and also one of the richest temperate regions of the world in terms of biodiversity. In 1989, this area was designated as a national scenic area by the State Council. Later in 2003, 1.7 million hectare consisting eight geographical clusters of this area was inscribed into World Heritage List. Besides, this area also contains many other kinds of protected areas named nature reserve, scenic area, forest parks and geological parks located in Lijiang City, Diqing Tibetan Autonomous Prefecture and Nujiang Lisu Autonomous Prefecture of Yunnan province. Large scale geographic overlap happens consequently.

2.1.1 Three-parallel Rivers National Scenic Area

Among others, the Three-parallel Rivers National Scenic Area which is 34,000 square km and covers 83% of the whole area (41,000 square km) is the biggest protected area.

Therefore, Three-parallel Rivers National Scenic Area almost contains all eight geographical clusters of Three-parallel Rivers World Heritage, together with 9 natural reserves at local, provincial and national level, e.g. Gaoligong Mountain Natural Reserve, and with 10 scenic areas, say Meili Snow Mountain scenic area.

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11 Stuart Chape et al., *United Nations List of Protected Areas* (2003), World Conservation Monitoring Centre, IUCN, United Nations Environment Programme and World Commission on Protected Areas, http://www.unep.org/pdf/un-list-protected-areas.pdf, 23.

2.1.2 Three-parallel Rivers World Heritage

Three-parallel Rivers World Heritage which covers land of some 17,000 square km (9,400 square km core zone and 7,600 square km buffer zone) is encompassed by National Scenic Area. Besides, the heritage area contains 5 nature reserve called Gaoligong Mountain, Baima Snow Mountain, Haba Snow Mountain, Bitahai and Lanpin Yunlin. Among these, overlap of World Heritage area and Gaoligong mountain natural reserve is 346872 ha large, which accounts for 70% of the natural reserve[12]; overlap of World Heritage area and Baima Snow Mountain natural reserve is 245848 ha large, which accounts for 85% of the natural reserve[13]; overlap of world heritage area and Haba Jukul natural reserve is 17175 ha large, which accounts for 78% of the natural reserve[14]; overlap of World Heritage area and Haba Jukul natural reserve is 13371 ha large, which accounts for 90% of the natural reserve[15]; Moreover, the 10 scenic areas referred are all located in the world heritage areas.

2.1.3 Others

There is also some overlap among 9 natural reserve and 10 scenic areas. For example, Gaoligong Mountain natural reserve overlaps with Moon Mountain scenic area and Gongshan scenic area in great extent; Yulong Snow Mountain natural reserve is also provincial tourist resort. Overlap among different type of protected areas can be seen everywhere in the region.

2.2 WHY OVERLAP EMERGES?

2.2.1 Legislative Deficiency

Different types of protected areas are regulated separately in China. In specific, the principal legal basis of natural reserve lies in one administrative regulation titled *Regulations on the Nature reserve* enacted by the State Council in 1994 and four department rules including *Measures on Administration of Fauna and Forest Reserve* promulgated by Ministry

12 Chen Jiang: *The Value of Natural Resources and Strategy of Protection and Administration of Three-parallel Rivers Protected Area*, a master's thesis of Beijing Forestry University, 2005, at 46 (hereinafter Chen Jiang).

13 *Id*, at 55.

14 Chen Jiang, *supra* note 12, at 55.

15 Chen Jiang, *supra* note 12, at 55.

of Forestry in 1985, *Measures on Administration of Marine Reserves* jointly promulgated by State Science and Technology Commission and Ministry of Agriculture in 1995, *Measures on Administration of Land in Natural Reserve* jointly promulgated by State Bureau of Land Administration and State Bureau of Environmental Protection in 1995 and *Measures on Administration of Aquatic Fauna and Flora Reserve* promulgated by Ministry of Agriculture in 1997. The legal basis of scenic area is *Provisional Regulations on the Management of Scenic Areas* issued by Ministry of Construction in 1985, which is *Regulations on the Management of Scenic Areas* (2006) now. The establishment and management of forest parks are largely regulated by *Measures on Administration of Forest Parks* developed by Ministry of Forestry. And geological parks management bases on *Provisions on Management of Geological Heritage* issued by Ministry of Geology and Mineral Resources in 1994.

Having different legal basis is not shortcoming of protected area system itself, but constitutes prerequisite of overlapping protected areas. These legal documents are drafted and enacted by separate legislature and conflicts come out in consequence. With it, one area meets various criteria would probably be assigned as more than one category of protected areas according to individual legal basis. Moreover, as for overlap, most of the legislations do not pin it down or at most invoke another legal provision. For example, Article 5 of *Provision on administration of Yunnan Three-parallel Rivers National Scenic Area* provides: "The management of established nature reserve, tourist region and natural resources such as land, mineral resources, waters, forests, grasslands and wildlife should be in accordance with related laws, regulations and rules." Under such circumstance, overlap of protected areas is lack of legal regulation.

2.2.2 Institutional Deficiency

In China, different kind of protected areas are approved and administrated by different departments. The competent forestry departments are responsible for administration of forest park. The department of land and resources is in charge of geological parks. Meanwhile, the department of forestry, agriculture, mineral resources and environmental protection are respectively responsible for different natural reserves based on protection objects. As a whole, environmental protection administration takes charge of coordination among above competent department.

When it comes to Three-parallel Rivers Area, after *Provision on administration of Yunnan Three-parallel Rivers National Scenic Area* enacted in 1990, Yunnan Provincial Government authorized Department of Construction to take responsibility for administration of the three-parallel rivers scenic area and specially built up the Three-parallel Rivers Scenic Area Provincial Management Office (PMO), which was renamed Three-parallel Rivers Scenic Area Provincial Bureau in 2002, to perform specific action. Under the instruction of PMO as well as administration of competent department, branch agencies are established at regional and local levels to take responsibility for planning, protection, construction and routine management. In August 2000, Yunnan Provincial World Heritage Management Committee consists of relevant provincial department and local government was set up. Later, 47 protection stations were established. Since then, a protection and management system including province, city, county and scenic area four levels was formed. Moreover, natural reserves in this area are separately administrated by forestry and environmental protection departments and its administrative bureaus are established in city and county levels. Besides, in an attempt to strengthen targeted protection, specific management organs are established in each natural reserve. For example, the Baima Snow Mountain national reserve established an administrative bureau, which contains Deqing and Weixi branch bureaus and 11 protection stations under it, in the capital of Diqing autonomous prefecture.

How to harmonize protection and exploitation values is always of great importance in protected areas. Undefined border, overlap and constantly change in boundary make it more problematic without any doubt. In reality, if an area is designated as nature reserve and scenic area, protection, management and exploitation of it will be in disorder. Up to respective objective, competent department of natural reserve focuses on protection and management while the other one put greater emphasis on exploitation. Each administrative organ goes its own way and the lack of coordination makes the problem more serious. Actually, one of the key principles of protected area is holistic protection which originated from interdependence of ecosystem. We can conclude that institutional design and power dispersion in nowadays China is a great obstacle to integrated management in protected areas and it can be considered as the institutional origination of overlap in protected areas.

2.2.3 Departmental and Regional Interests

As for some departments and regions, the monetary significance of protected areas which was highlighted by direct economic benefits such as financial aids and fund projects, better fame and intangible assets follows is far attractive than primary purpose. Natural reserve has great opportunities to receive investments and loans from governments of all levels; scenic areas can develop tourism; and forest parks can be exploited comprehensively. Facing with all these benefits, authorities of one area can not stop nominating for different protected areas attempting to gain supports and "incomes". *De facto*, many protected area in China now have more than one titles to meet discrepant demands and play a sort of "Title Game" from time to time.

In aggregate, there are profound legislation, institutional and interest roots for the overlap of protected areas which can not be changed shortly and has more or less impacts on poverty alleviation in protected areas.

2.3 Poverty in Three-parallel Rivers Area

The three-parallel rivers area covers Diqing Tibetan Autonomous Prefecture, Nujiang Lisu Autonomous Prefecture, Lijiang Prefecture and Shangri-la County, Deqing County, Weixi County, Lushui County, Fugong County, Gongshan County, Lanping County and Yulong County dominated by them; the total population is 800 thousand. Located in remote mountainous place, this area is little influenced by outside world; hence concentrated communities of minority nationalities are formed. With fragmentary geographic figures, abundant but fragile ecological landscape, scattered farmland, and short water resources, this area is at the edge of one of the four poverty areas in China—Qinghai-Tibet Plateau. Except Yulong County, the other seven counties are national poverty counties all along. It means that annual per capita net income of rural households is less than 1300 RMB. Take Nujiang Prefecture[16] as an example, there are still 275,300 people living in poverty with a per capita net income of rural households lower than 882 RMB, and 133,800 people could not make ends meet with a per capita net income of rural households lower than 637 RMB, which accounts for 60% and 33% of overall population respectively.

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16 Dominating Lushui County, Fugong County, Gongshan County and Lanping County.

127,000 people need displacement, and the other 45,000 people still live in straw house.[17]

Many concentrated communities of minority nationalities are converted from primitive society or slavery society sharply to socialism society. Despite of the great development in district economy owing to Reform and Opening, productivity is still low and apparently lies behind relations of production. Traditional cultivating model, which local people rely on to earn their living is in a primary stage, for instance, slash and burn, planting a lot whereas harvesting little. Therefore, they are largely dependent on nature and severely marginalized. However, in some approaches, human intervention are completely excluded[18], which leaves no room for people live in and near, and this would increase the conflicts between local people and protection authorities. As a result, living conditions of them become worsen because of utilization restriction imposed.[19]

2.4 IMPACTS OF OVERLAPPING PROTECTED AREAS ON POVERTY ALLEVIATION

As we discussed above, protected areas have both positive and negative effects on alleviating poverty, even though it is hard to measure them precisely. With reasonable institutional arrangements, protected areas may sometimes play a role in pro-poverty. But, overlap of protected areas aggravates poverty without exception. Limiting positive impacts while amplifying negative ones, it brings about higher pressure to local residents in the three-parallel rivers area.

Overlap of protected areas cut the inherent link between local communities and natural resources further. Rights and duties owned by local people may be diverse according to different legislation regulating different kinds of protected areas designated to one region. Actually, overlap of legal document leads to shrink of right sphere of local people, and further isolation from natural resources they live on. Among other things, ambiguous ownership which mainly appears as unreasonable assets distribution among nation, collectivity and individual is most problematic.

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17 http://news.sina.com.cn/c/2008-01-08/031714688744.shtml, last visited on June 6, 2012.

18 JA MCNEELY and K MILLER, NATIONAL PARKS, CONSERVATION AND DEVELOPMENT, THE ROLE OF PROTECTED AREAS IN SUSTAINING SOCIETY (1st ed. 1984).

19 Michael P Wells, *The Social Role of Protected areas in the New South Africa*, ENVIRONMENTAL CONSERVATION, 23(4), 325 (1996).

Limited resources with low quality cause discrepancy between income and outcome. To sustain their livelihood, people in local communities have no choice but to infringe property right possessed by others, such as cut logs owned by state.[20] Along with the aggravation of poverty, ecological damage becomes more and more serious.

Moreover, overlapping protected areas are administrated by multiple organs with different rules, which make decentralized administrative system more confused and malfunctioned. This is a violation to Integrated Ecosystem Management notion. Administrative power and responsibility are distorted as interests, leading to indifference in duty fulfillment. "Interest" conflicts between administrative organs fail to bring all governors into play. Some departments or local governments even consider protected areas as means of increasing fiscal revenue. As a result, protected areas are left unattended after approval. In reality, fiscal funding as well as capacity building assistant are far from meeting administration demands. We can say that distorted guiding notion caused by overlap could result in deterioration of ecological quality of the protected areas, what's more, ecosystem services which could benefit local communities and people are thus disappear.

Undoubtedly, more stakeholders are involved in overlapping protected areas; therefore, new interest claims and conflicts come out in succession. In between, local people are disadvantaged group. They are lacking of voice and empowerment, that is to say, they are always excluded form decision-making processes, governance systems and legal recourse which have great impact on their own survival and development. The weakness in empowerment which itself a kind of poverty could induce more poverty. Supposing an area is designated simultaneously as a natural reserve, scenic area which happens a lot in china now. On the one hand, utilization and exploitation are strictly prohibited as for a natural reserve, especially in its core zone; while on the other, "sustainable" (that is what they call) exploitation and land use are allowed and sometimes encouraged as for the scenic area on purpose. Consequently, tourism administrators, tourism developers, tourist guides, and tourists are added into former interest pattern. New stakeholders voicing their own interests continuously and they are relatively powerful. Once their claims authorized by administrator,

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20 Wei Huilan et al., *A Research on Community Co-management: On the Angle of Property Right* (Feb., 2008), SPECIAL ZONE ECONOMY, 287.

tourism construction and program widespread soon. At same time, local communities whose claims are always ignored are oppressed by the coupling powerful stakeholders. As a result, commercial developments thrives in company with destroy of natural resources while fundamental living demands can not be meet by contrast.

The overlap of protected areas justifies practices of developing economy at the expense of environment of local government. In fact, local government, a special character in the whole play, always takes a middle course when faced with economy growth and natural conservation dilemma. Sometimes, in order to develop economy, local government interferes in the management of protected areas. When protected areas overlap, they are very pleased to exploit protected areas blindly according to comparatively loose regulations. Sometimes, they do not hesitate to destroy forest, or construct highways in strictly protected areas which cause severe ecological disasters including avalanche, soil degradation etc.. It increases vulnerability of local people to risks—another aspect of their poverty.

From all the discussion above, we can conclude that overlap of protected areas impedes the trade-off between poverty alleviation and conservation interests.

2.5 Case Study

As one of the counties of Nujiang Prefecture, Gongshan Dulong and Nu Autonomous County, which is 4506 sq.km large has a population of 36,500. [18]It has 32,900 minority nationalities, accounting for 96% of the total population.[19] It lies in core zone of the Three-parallel Rivers World Heritage and Three-parallel Rivers National Scenic Area.

The whole Gonshan County is suited in Three-parallel Rivers National Scenic Area, and 70% of its territory belongs to the World Heritage; it also has national natural reserve which takes more than half of the Gaoli Gongshan National Nature Reserve; most of its territory belongs to Gongshan Scenic Area as well; moreover, Bingzhongluo Tourist Resort was set up in the north of this County. Therefore, within this county, five categories including world heritage, national scenic area, national natural reserve, tourist resort overlap to a great extent.

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18 Dai Junliang, A Brief Handbook on Administrative Divisions of the PRC 203 (1st ed. 2008).

19 http://www.yn.xinhuanet.com/live/2006-09/26/content_8129402.htm, last visited on June 1, 2013.

With a weak ecological conditions, low economic income and food production, severe water shortage, and backward communication level, this area is in an extreme poverty. Dependence on natural resources is direct and heavy. More severely, overlap of different categories of protected areas aggregates the conflicts between local people and protected areas: owing to different objective, conflicts arise over regional development and local people; tourism have a adverse impact on local ecological situation; the frequency of ecological damage and disaster intense; laws and regulations are too simple to rely on. The Article 5 of *Regulations on Nature Reserve* is a good case in point: "Then establishment and management of nature reserve should try to balance the relation with economy development and local communities.". Moreover, the uncertainty of resource proprietary rights and the irrational distribution inappropriate ownership of natural resources is another problem caused by overlap of protected areas.

3. WHAT SHOULD WE DO?

To reduce impacts overlap of protected areas exerted on poverty, on one hand, it is of great necessity to clear up overlap of protected areas, to adopt suitable category, and to define protected area border. For this purpose, China should accelerate legislation process on protected area, establish integrated management regime and adopt uniform category. On the other hand, to reconcile natural conservation with poverty alleviation of local people, long-term benefit-delivering mechanism including ecological compensation, community co-management and equitable benefit sharing should be set up.

3.1 CLEAR UP OVERLAP OF PAS

3.1.1 Legislation

As mentioned above, there is no uniform legal system concerning natural or cultural resources protection in China nowadays. Laws in terms of natural reserve, scenic area, forest park, geological park and sites of cultural relics are developed separately; articles of these laws are too principle to manipulate; definition to different protected areas are hard to tell. Thus, China should establish an umbrella legal system, which integrates all recent laws and regulations, regarding protected areas. Actually, this is what we are endeavor to do now. Among other things, a basic law on protected areas is essential.

Firstly, the basic law on protected area should be a law approved by national congress, rather than administrative regulation or rule. This would be a change to current problematic protected area legal system. One reason we say it problematic lies in that current system is full of confusion and conflicts in legal hierarchy.

Secondly, the new law should embrace all existing protected area types and establish compulsory category, eco-compensation, community co-management, planning etc. under the guidance of sustainable development. For detailed discussion, refer below-mentioned.

Thirdly, current administration systems need to be reformed. If it is possible, special administrator built up with in the national and local government targeting on protected areas would be better choice for protected area administration.

Before basic law on protected area comes into force, integrating related legal documents of Yunnan provincial level is more practical. *Yunnan Provincial Provisions on administration of Three-parallel Rivers National Scenic Area* and *Yunnan Provincial Ordinances on Three-parallel Rivers World Heritage* are two principal legislations on Three-parallel Rivers. The geographical regions which they regulate overlap to a wide extent. One reason why they coexist is that they actually regulate different protected areas respectively; the other reason is that the latter is issued for carrying out international commitment. Except the special legislations mentioned above, there are also coordination problems among other provincial legislations such as *Yunnan Provincial Detailed Rules on Administration of Forestry and Wildlife Natural Reserve*, *Yunnan Provincial Ordinances on Administrative of Natural Reserve*, *Yunnan Provincial Ordinances on Administration of Scenic Area* and legislations on specific protected areas such as *Measure on Administration of GaoliGong Mountain National Natural Reserve* and *Measure on Administration of Lashihai Plateau Wetlands Natural Reserve*. To clear up overlap of protected areas, Yunnan Province can formulate feasible countermeasures, develop pilot community co-management project, and adopt comprehensive administration approach in local level to counter poverty.

3.1.2 Protected Areas Categorization

Perfect protected areas category can clear up overlap of protected areas to a large extent. We should develop a system of categorization on protected area fit for China, based on IUCN category. The IUCN system divide protected areas into six categories: strict natural reserve/wilderness

area; national park, i.e., protected areas management mainly for ecosystem conservation and recreation; natural monument, i.e., protected areas managed mainly for conservation of specific features; habitat/species management area, i.e., protected areas managed mainly for conservation through management intervention; protected landscape/seascape, i.e., protected areas managed mainly for landscape/seascape conservation and recreation; managed resource protected area, i.e., protected areas managed mainly for the sustainable use of natural ecosystems.

According to the categorization method above, it is necessary to categorize all protected areas in the three-parallel rivers areas through planning and Environmental Impact Assessment (EIA). It is noteworthy that the boundary of strictly natural reserve and national park should be defined rationally. For instance, Shangri-la Pudacuo National Park of Yunnan Province is under construction now and the reaction from outside is fine.

3.1.3 Planning

Within current legal framework, improving planning in establishment and management of protected areas is obviously a makeshift measure. In fact, many laws have stipulated some principles on it. Article 7 (2) of 2006 *Regulations on the Administration of Scenic Areas* provides that: "Newly established scenic areas should not coincide or overlap with nature reserve; if coincidence or overlap happen, the plan of scenic area and that of nature reserves should be coordinated."

Nowadays, even though many national nature reserves, scenic areas and forest parks have laid down general plan, they seldom take effect because of few rigid requirement and inspection mechanism; in addition, within the formulation progress, many stakeholders, especially local communities are not engaged, hence, content of the plan are unpractical; lacking of implementation mechanism is another common shortage. Therefore, it's of great necessity to develop plan of each protected area and try to coordinate them.

If one protected area overlaps with another, their plan should be coordinated. For example, the plans of the nature reserves which wholly overlap with the Three-parallel Rivers National Scenic Area should harmonize with that of National Scenic Area. Conflicts should be decreased as much as possible. When harmonizing plans of overlap protected areas, strict protection principle should be followed. For instance, when a natural reserve and a scenic area overlap, natural conservation should be carried out

according to the natural reserve's plan, rather than the scenic area's. When revised after coordination, the new plan should be approved by competent authority.

3.2 Benefit-Delivering from Protected Areas to Local Community

3.2.1 Ecological Compensation

The long-term value of biodiversity has a feature of public goods.[20] When it comes to local communities and people, benefits come from its direct value is bigger than that from indirect value, thus we can say protected area is no better than other land-use type. Biodiversity protection is achieved at the opportunity cost of local residents, in other words, they undertake too much but do not get equitable compensation; it leads to the PA versus local community and protection versus development conflicts which cause further degeneration of environment. However, at national and global level, the benefited parties of biodiversity protection do not undertake protection costs.[21] So, rational eco-compensation becomes a great necessity. As a dynamic interest coordination approach, eco-compensation reallocates interests linkage to ensure equitable cost-benefit sharing and to alleviate poverty worsened by overlap protected areas.

Eco-compensation in three-parallel rivers area should be mainly market-guided together with government-guided compensation as subordination. Government-guided compensation primarily contains eco-compensation funds and crop-to-forest subsidy etc. in the form of public finance. In contrast, market-guided compensation is much more incentive and should be viewed as mainstream. It resorts to property rights trade system, environmental fund, contractual compensation and so on through negotiation of related parties. The objects of eco-compensation are communities and residents live in and around protected areas whose production and life are damaged by the construction of various protected areas. When defining the scope of compensation objects, differences among communities and residents should be considered. As effective ways to increase living opportunities of local communities and people, sustainable

20 Andrew Balmford et al., *Economic Reasons for Conserving Wild Nature*, SCIENCE, 297: 950-953 (2002).

21 Michael Wells, *Biodiversity Conservation, Affluence and Poverty: Mismatch Costs and Benefits and Effort to Remedy Them.* AMBIO, 21(3): 237-243 (1992).

compensation including policy preference, financial fund, technology input, labor force training, education and job should be emphasized

3.3.2 Community Co-management: Establishing Long-term Benefit Sharing Mechanism

Interest conflicts between protected areas and local people are the hardest chain in PAs-PA relation. The ecological compensation discussed above can solve them to some extent, but local communities and residents can still not be involved in the management of protected area. A lot of experiences shown that by engaging with local people to conserve aspects of biodiversity that are critically important to their livelihoods, such strategies can build broader-based, long-term public support for protected of globally threatened biodiversity. The core component of community co-management system is engagement of whole communities and people, including women, and only in this way could transparency and accountability be improved during the decision-making process. Community co-management can be defined as a process in which local communities and protected areas administrator manage natural resources of the communities and protected areas together. It has two implications: one is that co-management plan should be formulated; the other is that local communities participate in and assist management of natural resources in protected areas.[22] The aim of community co-management is effective biodiversity conservation and sustainable management of natural resources; co-management subjects are stakeholders such as governments, local communities and protection organs; also, co-management objects are natural resources in protected areas and communities.

As a multi-stakeholder involvement and benefit-sharing mechanism, community co-management has a prominent function in practice. Such pilot is under way in three-parallel rivers areas. In 1995, a program named *Biodiversity Protection and Community Forest Resource Management in GaoliGong Mountain, Yunnan Province* funded by MacArthur Foundation established *Farmers' Biodiversity Protection Association* in Baihualing Village, which indicated the beginning of community co-management. Until now, nature reserves in the Three-parallel Rivers such as Gaoligong

22 Wang Xianpu: *Theory and Practice on Co-management of Protected areas and Communities Around*, in State Forestry Bureau Wildlife Protection Department: *Selected Papers on GEF Co-management Program*, Beijing: China Forestry Press, 2002.

Mountain, Baima Snow Mountain, Laojun Mountain and Bitahai have tasted community co-management mechanism.

3.2.3 Benefit-sharing of Biological Resources and Traditional Knowledge

Owing to overlap of protected areas, local communities and people are not only isolated from natural resources they rely on, but also repel them away from biological resources and traditional knowledge which is harm for poverty alleviation.

Recognizing the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components,[23] it should be guaranteed that local communities and residents can share benefits brought by bio-prospecting and utilization and commercialization of biological genetic resources. In a sense, it is extension of their traditional rights to natural resources utilization in protected areas so that they can gain something at least. The forms of benefit-sharing includes: costs for getting species, usage cost, data and technology exchange, capacity building and training.

Besides systems explicated above, eco-migration, eco-tourism, eco-agriculture and so forth are also effective methods to alleviate poverty induced by overlap of protected areas.

4. Perspective

To sum up, through analyzing overlap of protected areas and poverty in Three-parallel Rivers Area of Yunnan province, it can be seen that overlap of protected areas has far-reaching and great effects on poverty alleviation. Great emphasis should be paid to "life cycle" of protected areas: in establishment phase, scientific category need to be adopted; in construction phase, boundary of protected areas should be clearly defined; in management phase, mechanism of benefit-sharing and community participation should be established. Only in this way can harmonization of the protected areas and local communities, equitable benefit-sharing of biodiversity and sustainable development be realized ultimately.

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23 The Preamble, the CBD, *supra* note 7.

OCEAN BASED TECHNOLOGICAL RESPONSES TO CLIMATE CHANGE: DO LEGAL UNCERTAINTIES PRESENT A SIGNIFICANT INVESTMENT RISK?

Karen Sullivan[*]

Abstract

The international response to climate change has led to the development of a range of technologies aimed at reducing the atmospheric carbon dioxide from fossil fuels and increasing the amount of clean energy generated from renewable resources. Many such technologies operate by choice or necessity in the marine environment. The result is that they are subject to the operation of a highly complex and often fragmented domestic and international legal environment, including the evolving regulatory regimes which are developing to control the new activities. This paper investigates whether any resulting areas of legal uncertainty are purely academic in nature, or whether their effect is to create such a level of uncertainty regarding commercial viability of the technology they affect, that they act as a disincentive to investors. The conclusion is that strong political will to support the development and implementation of these climate change technologies is evident, and that not only are detailed regulatory regimes developing in many jurisdictions, but some of the emerging uncertainties are already being addressed. However, there remain a number of areas of legal ambiguity or lack of detail which may still pose a significant threat to continued investment in this important area of response to the global challenge of climate change.

1. INTRODUCTION

International concerns regarding the potential impact of climate change led to the adoption of the United Nations Framework Convention

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on Climate Change in 1992 (UNFCCC). The overriding objective of this treaty is the stabilisation of greenhouse gas (GHG) concentrations in the atmosphere "at a level that would prevent dangerous anthropogenic interference with the climate system."[1] In pursuit of this objective, over and above energy efficiency measures, the key generic approaches are:

- To decrease atmospheric concentration of GHGs from continuing carbon fuel consumption by either physical or biological sequestration of the resulting carbon dioxide emissions, and
- To decrease reliance on carbon based (and hence GHG emitting) fuel sources by increasing power generation from renewable resources

With the carbon capture and storage (CCS) approach,[2] carbon dioxide can be injected into rock formations either on land or under the sea (known as geosequestration), or injected directly into the water column of the sea itself. Carbon dioxide capture and integration by living organisms, known as biosequestration, has both terrestrial and marine equivalents, with forest management providing the basis of carbon sinks on land,[3] and either ocean eutrophication or enhanced mariculture of crops such as seaweed forming the basis of a marine carbon sink.[4] Similarly, some forms of renewable energy generation, such as wind power, can be sited either on land or at sea, whilst others, such as wave power generators are by necessity marine based. Consequently, ocean based technological responses to the challenge of climate change constitute a significant element of the global climate change mitigation strategy. In order that such approaches make a meaningful contribution to global GHG reduction, it follows that they will be projects of scale, and the natural corollary of such projects being new or developing technologies, of significant scale, with the logistical challenges of a marine location, is that they will require financial investment on a substantial scale.[5]

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1 United Nations Framework Convention on Climate Change, Article 2, 9 May, 1992, 1771 UNTS 107.

2 *Carbon capture and storage* (2005), INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), www.ipcc.ch/ipccreports/special-reports.htm (hereinafter IPCC Report).

3 Nicola Durrant, *Legal issues in biosequestration: carbon sinks, carbon rights and carbon trading,* (2008) 31 (3) U.N.S.W. LAW JOURNAL 906-918, 906.

4 V Sinha et. al, *Carbon dioxide utilisation and seaweed production,* www.netl.doe.gov/publlications/proceedings/01/carbon_seq/p14pdf.

5 There are reports that the recently opened wind farm cost £780 m to construct: *Largest offshore wind farm opens off Thanet in Kent* (23 Sept., 2010), http://www.bbc.co.uk/news/uk-england-

Any company making a significant investment off balance sheet for a particular project, climate technology or otherwise, will undertake appropriate due diligence prior to gaining board approval for the financial commitment. Similarly, an external investor will undertake a broader range of investigations on the project and the wider company, if the finance is being raised externally. Legal due diligence is a standard part of any such investigation, and whilst there is no absolute definition of the process, I believe the following description would be generally recognised by practitioners in the field: "A legal due diligence consists of a scrutiny of all, or specific parts, of the legal affairs of the target company with a view of uncovering any legal risks…"[6] This implies that the scrutiny of legal due diligence is focused on the identification of legal uncertainties and associated risks which are internal to the company, and in fairness to the authors of this description, this is usually the case. This is due to the fact that much business is conducted in areas where there is a high degree of certainty relating to the external legal environment, and it is only the target company or project's compliance with such a prevailing external legal regime that is under investigation. However, in areas of commercial activity where new technologies are being implemented and exploited, such external legal certainty cannot necessarily be taken as read. This is particularly the case where new technologies are being exploited in the marine environment, due to the particular complexity of application of the law of the sea, as will be discussed later.

The validity of this proposition may be supported by reference to an early consultation paper produced by the UK government on the development of a domestic offshore wind industry.[7] This paper conceded that, at the time of writing:

> "… beyond the limits of territorial waters there is currently no comprehensive legal framework for regulating development of the resource, nor for granting developers security over a site. Primary legislation will be necessary to

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kent-11395964. There are reports of a project cost of £40 m as a forerunner to much larger projects: *Worlds first tidal energy farm to be built off Islay* (18 Mar., 2011), http://thescotsman.scotsman.com/scotland/World39s-first-tidal-energy-farm.6736092.jp .

6 *Legal Due Diligence*, BIRD & BIRD, http://www.bvhd.dk/raadgivningsomraader/produkter/legal-due-diligence/

7 *Future offshore: A Strategic Framework for the offshore wind industry* (2002), DEPARTMENT OF TRADE AND INDUSTRY OF THE GOVERNMENT OF THE UK, http://webarchive.nationalarchives.gov.uk/20091002231857/http://www.berr.gov.uk/files/file22791.pdf

address this shortcoming so that the potential of offshore renewables can be fully realised."[8]

This deficiency was subsequently addressed by Part II of the 2004 Energy Act, which provides the relevant regulatory framework not just for wind power but for all sources of offshore renewable energy development in UK waters. Nonetheless, this example demonstrates the fact that evolving uses of the sea can reveal deficiencies in the prevailing legal regime which, left unaddressed, may present legal risks and thereby act as barriers to investment and development. This arises in part because the United Nations Convention on the Law of the Sea (UNCLOS)[9] represents a framework convention, which sets out the rights and responsibilities of States with respect varying uses of the marine environment and its resources, but leaves it for either other international conventions or national legislation to prescribe the specific legal measures regulating such activities.[10] In addition, all legal regimes are subject to the limitations of foresight, and new technologies can enable uses of the sea or its resources that were completely unanticipated at the time or enactment or ratification, and which do not fit well within existing definitions of rights or responsibilities. However, unlike national legislation, as the most widely ratified international agreement, amendment of UNCLOS itself is an enormously complex process,[11] and legal development is therefore more likely to occur at the level of regional agreements or domestic legislation, in measures that are consistent with UNCLOS, rather than via amendment of UNCLOS itself.

Using a representative range of ocean based technologies associated with climate change mitigation, this paper will seek to identify any areas where the current law of the sea, at the level of UNCLOS, other international or regional agreements or prevailing coastal state domestic law, is lacking in either substance or legal certainty of application. It will then

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8 *Id,* at 32.

9 1982 United Nations Convention on the Law of the Sea, 10 Dec., 1982, 1833 UNTS 3 (hereinafter the UNCLOS).

10 Art. 210(1), UNCLOS, *id.,* which concerns pollution by dumping, requires that "States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment by dumping", and section 4 of the same article requires that states shall establish global and regional rules and standards to prevent, reduce and control such pollution.

11 Arts. 312-317, the UNCLOS, *supra* note 9.

assess whether any such deficiencies are mere academic curiosities or whether they may represent potential barriers to large scale investment.

2. THE INHERENT COMPLEXITY OF THE LAW OF THE SEA

Whilst regulatory regimes prevailing on land are generally uniformly applicable to the entire territory to which they extend,[12] the regulatory framework applied to the sea operates in a wholly different manner, in that the sea is divided into a number of distinct and geographically variable zones for the purposes of determining the rights and responsibilities of states and users within such zones. Such zones, their sovereignty, control, and third party rights and obligations are now substantially codified in the United Nations Convention on the Law of the Sea (UNCLOS). For the purposes of this paper, the zones of particular relevance are:

- **The Territorial Sea** (TS) governed by Part II of UNCLOS, which extends to 12 nautical miles (nm) from coastal baselines,[13] over which the coastal state has sovereignty in respect of the airspace, water, seabed and subsoil,[14] and through which other states have rights of innocent passage (subject to a number of conditions)[15]
- **The Exclusive Economic Zone** (EEZ) which may be claimed by coastal states,[16] is governed by Part V of UNCLOS and extends up to 200 nm from the coastal baselines.[17] This zone is of particular importance, because as Churchill and Lowe note, if it were universally established, EEZ's "would embrace about thirty-six percent of the sea".[18] The importance is further underlined by the fact that such an area "contains over ninety percent of all presently commercially exploitable fish stocks, about eighty-seven per cent of the world's known submarine oil deposits and about ten per cent of manganese

12 The Waste (England and Wales) Regulations, 2011 No. 988 (2011), for example, are applicable throughout England and Wales, with no other geographical constraints as to their application.
13 Art. 3, the UNCLOS, *supra* note 9.
14 Art. 2, the UNCLOS, *supra* note 9.
15 Arts. 17-32, the UNCLOS, *supra* note 9.
16 Whilst most coastal states have claimed the 200 mile EEZ, there is no obligation on a state to do so: R R CHURCHILL and A V LOWE, THE LAW OF THE SEA 161 (3rd ed. 1999) (hereinafter RR CHURCHILL AND AV LOWE).
17 Art. 57, the UNCLOS, *supra* note 9.
18 RR CHURCHILL AND AV LOWE, *supra* note 16, at 162.

nodules."[19] The coastal state has sovereign rights over the water, seabed and subsoil of the EEZ in respect of exploitation of natural resources, and specifically over economic exploitation of the of the zone, including but not limited to, activities "such as the production of energy from the water, currents and winds".[20] It also has jurisdiction over the zone in respect of establishing artificial islands, installations and structures.[21] All other states have the right of navigation, overflight and the laying of cables or pipelines.[22]

- **The Continental Shelf** (CS) is determined by geological criteria as set out in Part VI of UNCLOS, and in some instances may extend beyond the 200 nm limit of the EEZ, with a maximum deemed limit of 350 nm from coastal baselines.[23] The sovereign rights of the coastal state in respect of exploitation of natural resources, only extend, in this zone, to the "mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species."[24] Note that unlike in the EEZ, the waters above the CS are not included in this definition. Coastal states further have the right to construct artificial islands, installations and structures on the CS,[25] and the exclusive right to control drilling[26] whilst other states have the right to lay cables or pipelines across the CS of the coastal state.[27]
- **The High Seas** (HS), governed by Part VII of UNCLOS, constitutes the residual part of the sea not otherwise included in the EEZ, TS or internal waters of a state, or the archipelagic waters of an archipelagic state.[28] All states enjoy the freedom of the HS, which includes freedom of navigation (not restricted to innocent passage), freedom of overflight and fishing, and freedom to lay cables and pipelines and to construct artificial islands and other installations.[29] A general restriction on such rights is that they must be exercised "with due

19 RR CHURCHILL AND AV LOWE, *supra* note 16, at 162.
20 Art. 56(1)(a), the UNCLOS, *supra* note 9.
21 Art. 56(1)(b), the UNCLOS, *supra* note 9.
22 Art. 58(1), the UNCLOS, *supra* note 9.
23 Art. 76(5) and (6), the UNCLOS, *supra* note 9.
24 Art. 77(4) , the UNCLOS, *supra* note 9.
25 Art. 80, the UNCLOS, *supra* note 9.
26 Art. 81, the UNCLOS, *supra* note 9.
27 Art. 79, the UNCLOS, *supra* note 9.
28 Art. 86, the UNCLOS, *supra* note 9.
29 Art. 87(1), the UNCLOS, *supra* note 9.

regard for the interests of other States in their exercise of the freedom of the high seas".[30]

These definitions demonstrate that in addition to considering these four zones prescribed in the main by their horizontal distances from coastal boundaries, one must also consider the five key vertical strata: air space above the sea (overflight), the waters of the sea and their content (navigation and fishing), the seabed (construction of installations), the subsoil (minerals) and the deep sea bed (drilling). When one considers a representative range of climate change related technologies, that may operate via differing mechanisms, interacting with varying vertical strata in any of the four key marine zones, then the complexity of the resulting potential permutations becomes clear. This situation is further complicated by the fact that all of the technologies to be discussed will potentially be the subject of domestic and international law, in addition to the relevant provisions of UNCLOS, relating to the aforementioned activities as well as pollution and environmental protection.[31] This article does not aspire to be an exhaustive treatment of the legal regime and its potential limitations in respect of the operation of all relevant technologies in all possible zones and international territories. Rather it aims to examine the topic on the basis of:

- the key technical features of the main categories of ocean based climate change related technologies, to the extent they are relevant to the determination of the applicable law[32]
- assuming operation in the zone such technologies are most likely to operate in, if known,

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30 Art. 87(2), the UNCLOS, *supra* note 9.

31 Pollution is addressed under an array of treaties, relating to the source of the pollution, the nature of the pollutant or the location in which the pollution may occur. For example, intentional pollution from shipping is covered by multilateral treaties such as the MARPOL Convention (International Convention for the Prevention of Pollution from Ships, 2 Nov., 1973, 1340 UNTS 184) under the auspices of the International Maritime Organisation, which also sets out standards for specific pollutants under a series of annexes. In terms of geographically based pollution control, there is an array of treaties, covering regions such as the Baltic, the Antarctic, West Africa or the Red Sea. For a detailed review see RR CHURCHILL AND AV LOWE, *supra* note 16, at 333-338.

32 The author offers apologies to that element of the readership of this article with technical or scientific backgrounds for the cursory nature of the treatment of such technical features, but greater technical specification is better reserved for technology-specific investigations, should they be appropriate, and is not appropriate for the more general review based approach intended in this article.

- as they may operate in the TS, EEZ, Exclusive Renewable Energy Zones, CS or HS, as is applicable, of the North Sea,
- within the context of the legal regime prescribed for the North Sea by UNCLOS, European Union Environmental Law, relevant regional treaties, international treaties relating to technology specific pollutants and general principles of international law.

Technologies will be discussed in two categories: carbon capture and storage, and renewable energy generation, and within each category, technologies will be discussed on the basis of whether they are substantially based in a fixed location or potentially mobile or dispersed. Any legal uncertainties identified will then be examined to ascertain whether they are of such a nature as to represent a significant risk to associated investment.

3. Ocean Based Carbon Capture And Storage (CCS)

3.1. Fixed location CCS: Geological Carbon Capture and Storage (GCCS)

3.1.1. Introduction

GCCS is a generic term that encompasses a range of specific technologies, the key features of which are that they capture carbon dioxide, pre or post combustion, from point source installations such as power plants, compress it, transport it via pipelines, and then inject it into appropriate geological sites at sufficient depth to indefinitely prevent its release to the atmosphere. Whether such sites are onshore or offshore will in many instances be dictated by the geography and geology of the States concerned. The UK has made a policy decision to site its GCCS installations exclusively offshore and so in this territory all such operations will occur in the marine environment. The UK extended the sovereign right granted under Art 56 of UNCLOS to explore and exploit the seabed, subsoil and waters within its 200nm Exclusive Zone, to specifically include the storage of carbon dioxide, under the Energy Act 2008.[33] The UK has substantial experience in offshore oil and gas reserve exploitation, which means that it has appropriate offshore geology and related infrastructure to enable its marine CCS operations. The selection of marine storage may also have been guided by the expression of public concern regarding onshore

33 The UK elected to amend existing legislation rather than enact a new regulatory regime to cover CCS.

storage.[34] The complexities of subsoil resource and storage space ownership in certain territories may also steer other States to favour marine CCS as the industry develops.[35] The location of the injection and storage sites, like those of oil and gas installations, are most likely to be sited within either the 12nm TS or 200nm EEZs of coastal states, thereby falling under their jurisdiction according to the terms of UNCLOS.[36] Recalling that UNCLOS represents a framework agreement, the relevant domestic laws of coastal states will provide the substantive legal framework regulating GCCS are hence there may be significant variation in the prevailing regimes between the coastal waters of different states, even within a relatively small geographic location.[37]

The development of the CCS sector to date has not been without domestic[38] and international political opposition.[39] The environmental argument against the widespread adoption of GCCS is that it encourages the continued use of fossil fuels rather than incentivising investment in, and development and adoption of, cleaner renewable energy sources. Despite the irrefutable environmental rationale of this argument, the reality is that those countries with sizeable coal, oil and gas reserves will have significant reliance on these industries for jobs, economic strength and energy security, and as such are unwilling to abandon such resources in the near term.[40] Environmentally desirable or not, the current position is therefore that carbon capture mitigation technologies such as GCCS and other measures addressed in this article with the potential to reduce the carbon dioxide emissions from fossil fuels, will form an inevitable part of GHG mitigation measures.

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34 *Public Awareness and Acceptance of CO_2 Capture and Storage* (May 2011), EUROPEAN COMMISSION, http://ec.europa.eu/public_opinion/archives/ebs/ebs_364_en.pdf.

35 Les Lo Baugh and William Troutman, *Assessing the challenges of geologic carbon capture and sequestration: a California guide to the cost of reducing CO_2 emissions*, (2009) I.E.L.R., 8, 293-299 (2009).

36 See Section 2 above.

37 Art. 210, the UNCLOS, *supra* note 9.

38 Spencer Fitz-Gibbon, *No public funding for carbon capture, say Green Party* (23 Apr., 2009), THE GREEN PARTY OF ENGLAND AND WALES, http://www.greenparty.org.uk/news/23-04-2009-clean-coal-distraction.html.

39 *International Climate Change Legislation & CDM: CCS in the Clean Development Mechanism*, UNIVERSITY COLLEGE LONDON CARBON CAPTURE LEGAL PROGRAMME, http://wwws-uat.ucl.ac.uk/cclp/ccsinCDM.php, at 1 (hereinafter the UCL Programme).

40 C Trabucchi and L Patton, *Carbon Sequestration*, BUREAU OF NATIONAL AFFAIRS WORLD CLIMATE CHANGE REPORT SEPTEMBER 3, 2008, 4-5 (hereinafter C Trabucchi and L Patton).

The recent ratification by the parties to the Kyoto Protocol of a Decision to grant GCCS technologies eligibility under the Clean Development Mechanism (CDM)[41] for the purpose of generating project related carbon credits may be seen as an international validation of this approach to meeting GHG reduction targets.[42] As a result, the importance of the ability to attract private sector investment into the development and operation of this technology becomes evident.

3.1.2. Defining a GCCS Project

Before progressing further with an analysis of legal issues relating to GCCS projects, it may be instructive to consider, in terms of a definition, what actually constitutes a "GCCS Project". Does it include just the injection and storage area, which as we have discussed will be located offshore in many cases, or does it extend to cover the entire life cycle of the activity? If the latter, it may also include the power plant or other point source of production, the capture and compression mechanism, the pipeline as well as the injection facility and geological storage area. This point is far from academic, and is directly relevant to matters such as the application of Environmental Impact Assessments (EIAs) – does an EIA need to be conducted for the whole process or for the individual components, given that they may operate in different geographies ie onshore and offshore, and with consequently different environmental risks? Perhaps a guiding principle may be found in the draft 2011 Decision of the Parties to the Kyoto Protocol, regarding the rules governing CCS in the CDM. These take a broad and inclusive approach to the description of what constitutes the "project boundary" for CCS projects. Specifically this includes "the capture installation; any treatment facility; transport equipment; reception facility at the injection site, the storage site and all "vertical and lateral limits of the carbon dioxide geological storage site that are expected when the carbon dioxide plume stabilizes over the long term during the closure phase and post-closure phase".[43] Clarity on this point will emerge as

41 The CDM allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries: Kyoto Protocol to the United Nations Framework Convention on Climate Change, 11 Dec., 1997, 37 ILM 22 (1997).

42 The UCL Programme, *supra* note 39, at 6.

43 Para G 13 of the draft Decision, available at

operational scale sites pass through the process, but there is no guarantee that there will be uniformity of decision on this point between different territories.

A second important issue regarding the definition of terms, is whether the carbon dioxide being sequestered is to be regarded as waste or not. This distinction may be critical with respect to the operation of prevailing domestic law regarding waste disposal.[44] Kerr reports that initial CCS demonstration projects have all classified carbon dioxide "as a resource rather than as a waste".[45] He goes on to propose that this distinction is important as "industrial resource recovery projects are usually subject to regulation by existing oil and gas regulations while waste/pollutant disposal will fall under the jurisdiction of relevant environmental agencies". Many such projects have occurred as a consequence of the utilisation of carbon dioxide in Enhanced Oil Recovery (EOR) process, and Kerr concludes that "CO2 storage projects that do not have a resource recovery component are in a legal grey area".[46] Where bespoke national legislation operates to prescribe the control of carbon dioxide disposal, this point becomes moot.[47] The specific definition also becomes irrelevant where international agreements have been amended to specifically address CCS. For example, the London Protocol to the London Convention,[48] which operates to

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http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cmp7_carbon_storage_.pdf It is worth noting that this definition was removed from the final version of this Decision, perhaps an indication of the inevitable tension between environmental and commercial interests.

44 In legal proceedings by the Scottish Environmental Protection Agency against Scottish Power plc, the definition of "waste" determined which regulatory regime would be applied to a power plant that wished to burn waste-derived fuel. The judgement found that the more stringent regime applicable to co-firing of waste with coal should prevail, making an otherwise environmentally sound energy recovery option financially unviable.: Opinion of Lord Reed in the Petition of Scottish Power Generation Limited for Judicial Review of a Decision by Scottish Environment Protection Agency (22 Dec., 2004), available at http://www.scotcourts.gov.uk/opinions/p1876_03.html.

45 TM Kerr, *Legal and Regulatory development: the path forward to advance carbon dioxide capture and storage as a climate change solution*, INTERNATIONAL ENERGY LAW AND TAXATION REVIEW (2007), 11/12, 232-240 (2007).

46 *Id.*

47 For example the member state enactments of the European CCS Directive (Council Directive on the Geological Storage of Carbon Dioxide and Amending Council Directive 85/337/EEC (hereinafter the EU CCS Directive), European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No. 1013/2006, 23 Apr., 2009, 2009/31/EC).

48 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 29 Dec., 1972, 1046 UNTS 120 (hereinafter London Convention) and the 1996

protect the marine environment from pollution arising from human activities principally within the water column (such as from vessels or platforms) was amended in 2006 to specifically provide for the geological sequestration of carbon dioxide.[49] This permission, to be regulated and licensed by national governments, is contingent on the disposal being into a sub-seabed geological formation, where the stored stream consists overwhelmingly of carbon dioxide and where no waste is added to it for the purposes of disposal. However, in territories where a designated regulatory regime is not yet in place, and which are not signatory to the London Convention, the issue of whether the carbon dioxide is being "disposed of" as opposed to simply "stored" may be pivotal in arguing the classification of carbon dioxide sequestration as a resource or waste. This may hinge on the current or future technical feasibility of recovery of the stored gas or liquid.

3.1.3. Environmental Impact Assessment

Art 206 UNCLOS imposes a general obligation to assess potential effects of activities within the marine environment, arising from pollution from land based activities as set out in Art 207, and seabed activities subject to national jurisdiction, as per Art 208. Carbon dioxide capture from land based power stations, transmitted by pipelines and injected into the seabed within the TS, EEZ or CS will fall under these provisions. Many territories will also be required to undertake Environmental Impact Assessments as part of their domestic law. In the European Union, member states are subject to both the Strategic Environmental Assessment Directive (SEA)[50] and the Environmental Impact Assessment (EIA) Directive.[51] The former is a process to be adopted by public authorities in the preparation of certain plans and programmes of development, whereby the potential significant environmental impacts of such plans must be considered at an early stage of

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Protocol to the London Convention 1972, 7 Nov., 1996, 36 ILM 1 (1997) (hereinafter London Protocol). he International Maritime Organisation acts as the administrative body for this international agreement.

49 Resolution LP.1(1) on the Amendment to Include CO_2 Sequestration in Sub-Seabed geological Formations in Annex I to the London Protocol, 2 Nov., 2006, available at http://www.imo.org/blast/blastDataHelper.asp?data_id=17614&filename=01.pdf

50 Directive on the assessment of the effects of certain plans and programmes on the environment, 27 Jun., 2001, 2001/42/EC: This directive ensures that environmental consequences of planned developments are identified and considered at the early stages of preparation, and prior to adoption of strategic plans. This allows for public participation and expert comment on the plans and the integration of such considerations into the future planning process.

51 Council Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment, 27 Jun., 1985, 85/337/EEC as amended.

preparation. The EIA, in contrast, is the collection of evidence and consideration of environmental effects of a particular project. In a review of the application of environmental assessments to CCS, Grekos notes the challenges in applying the both the SEA and the EIA to this technology, particularly due to the fact that there is simply a lack of knowledge regarding the information required to complete a meaningful assessment of environmental impact.[52] She cites a technical study by DNV Consulting on knowledge gaps relating to CCS technology, which indicates deficiencies in; minimum domestic or international standards and criteria for storage site selection (including but not limited to geological and geochemical characteristics, reservoir property assessment, disposal well selection, well modelling, well design, materials quality and corrosion), modelling of carbon dioxide releases and effects on marine environment.[53]

The use of models of the likely behaviour of pollutants and the associated impacts based on validated data is an accepted part of many EIAs, but in this industry there is a paucity of appropriate data on which to build models that offer any degree of confidence in the predicted outcomes. From a legal point of view there is better news, in that within the EU, courts are reluctant to conduct a judicial review of EIA decisions based on the adequacy of the Environmental Statement (ES).[54] One exception to this observation is where the development may impact on protected species under the European Habitats Directive, and this aspect of the ES was not properly considered before development consent was granted.[55] Whilst the case cited below related to the presence of bats in an onshore development, the same Directive applies to the marine environment and a similar rationale could reasonably be expected to apply.

In the main, however, legal challenges to EIA decisions revolve around procedural failings by the competent authority.[56] Even if the outcome of a judicial review is that a particular consent was made ultra vires, this does not mean that a properly conducted planning consent or grant of licence would not deliver the same decision. In the best case, there

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52 Martha Grekos, *Carbon Capture and Storage: An Environmental Assessment*, JOURNAL OF PLANNING AND ENVIRONMENTAL LAW (2010), 1, 8-15 (2010) (hereinafter Martha Grekos).
53 *Environmental Assessment for CCS Projects* (Mar., 2007), http://www.ieaghg.org/docs/General_Docs/Reports/2007-1%20EIA%20for%20CCS.pdf
54 Martha Grekos, *supra* note 52, at 14.
55 R v Cornwal County Council Ex p. Hardy [2001] Env. L.R. 25 QBD.
56 Martha Grekos, *supra* note 52, at 15.

may still be delay and costs to overcome by the developer, and in the worst case, there could be revocation of licence and associated financial loss. The extent to which this loss may be recovered in any particular case is uncertain as costs awards in judicial review are discretionary. In a UK land based case, however, by order of the High Court, the Secretary of State was required to consult on the options available to give effect to a European Court of Justice ruling on the illegality of consent for a quarrying operation. As a result, a Regulatory Impact Assessment conducted by the Department for Communities and Local Government in 2006, presented an options analysis which included a revocation or amendment of the original permit, stating that in these circumstances, the holders of the mineral working rights "would be entitled to seek appropriate compensation for any loss."[57]

3.1.4. Environmental Liability

Within the European Union, the Environmental Liability Directive (ELD) covers several areas of environmental liability, but it is not a "self-sufficient" regime, and it operates alongside a range of domestic common law and statutory measures regarding different aspects of environmental liability, which will supplement the directive where their scope is broader or more stringent.[58] Analysts have noted that even as a baseline liability, the terms of the ELD expose CCS operators to potentially broad liability, and that elements such as liability for interim losses and compensatory remediation could prove very costly to operators over the longer term. They add that "the thresholds for environmental damage that trigger enforcement action under the directive are still ambiguous, making it difficult to quantify risk exposure over several decades into the future."[59] This legal uncertainty must surely be compounded by the scientific uncertainties regarding the potential impacts on the environment and other marine resource users as previously mentioned.

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57 *Regulatory Impact Assessment: The application of environmental impact assessment to the review of the mineral permission relating to Conygar Quarry, Norton's Wood Lane, Clevedon Somerset* (2006), DEPARTMENT FOR COMMUNITIES AND LOCAL GOVERNMENT FOR THE GOVERNMENT OF THE UK, http://www.communities.gov.uk/documents/planningandbuilding/pdf/160466.pdf

58 *Environmental liability Directive (Directive 2004/35/EC)*, GLOBAL CCS INSTITUTE, http://www.globalccsinstitute.com/networks/cclp/legal-resources/liability/europe/environmental-liability-directive.

59 *Id.*

Under UK law, a financial security is required for CCS operators which must be "of an amount sufficient to ensure that the obligations of the operator can me met", and it must be in force before injection commences.[60] The lack of clarity regarding the determination of this financial security has led to expressions of concern that it may make CCS investment unviable.[61]

An even greater challenge exists with respect to the treatment of long term liability for the stored carbon dioxide beyond not only the injection period, but essentially in perpetuity. Commercial entities acting as CCS operators inevitably have a shorter lifespan, and therefore the regulatory scheme must include provisions for a hand over of liability and responsibility for the residual monitoring and verification requirements to some competent authority. The difficulty arises in the determination of a financial mechanism that will ensure that sufficient funds are available to cover future remediation and compensation liabilities, and that these costs are met by the polluter rather than the public purse. The CCS Directive recommends, but does not compel, the requirement for a financial security in respect of ELD liabilities transferred to the competent authority post closure.[62]

3.1.5. Regulatory Risk

At the heart of this category of risk is the fact that the CCS market is a creation of policy. It has not been created by free market demand, but by government responses to the domestic implementation of their international obligations with respect to the mitigation of climate change under the UNFCCC. This is manifested in two ways:

- There may be a legally mandated imperative to use the technology under command and control type regulation. This is the case in the UK, where under the implementation of Article 33 of the CCS Directive, new coal fired power stations must be CCS enabled.
- The regulatory framework may include financial incentives to adopt and operate the technology. This type of approach was adopted in

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60 The Storage of Carbon Dioxide (Licensing etc.) Regulations 2010, SI 2221, Schedule 2(7)(1) (hereinafter Carbon Dioxide Regulations).

61 *A Strategy for CCS in the UK and Beyond* (8 Sept., 2011), CARBON CAPTURE AND STORAGE ASSOCIATION, available at http://www.ccsassociation.org/press-centre/reports-and-publications/, 46.

62 *Id*, at 9.

the UK in respect of another climate change related technology, namely to incentivise the adoption of solar panel derived energy, by way of provision of so called "feed in tariffs" which allowed excess energy generated by end users to be sold at an attractive rate back to the national grid, thereby offsetting their initial investment.[63] By incentivising the end market user, this stimulated the market demand.

Whilst these are clearly desirable outcomes for investors, they also introduce a new category of legal risk, namely that of regulatory risk. This means that if the regulatory environment that encouraged entry into or investment in, the market sector changes, then the market may fail and investment may be jeopardised. The following are examples in which just such a regulatory risk may be realised. In July 2012 in the UK, amendments to feed-in tariffs were reduced, and as a result, the future market for the associated solar panels was adversely affected, with a reported 80% drop in demand in the weeks following introduction of the reduced tariffs and subsidy lifetime.[64]

An example which is directly applicable to the CCS industry was the fact that the UK funding for CCS demonstration projects was initially expected to be financed via a new CCS levy established under the auspices of the Energy Act 2010 but in a subsequent spending review it was announced that the funding would come from general taxation.[65] Armeni, states that "this turnaround has revealed the precariousness in the government provisions on financing for CCS in the Energy Act 2010 and has been considered as seriously undermining industry's confidence in the government's ability to support the demonstration projects and as a negative signal to potential developers."[66]

A recent article by Standard and Poor's, the global credit ratings agency, indicated similar concerns regarding the threat of regulatory risk to

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63 The Energy Act (2008) provides powers to introduce feed-in tariffs.

64 Peter Bennet, *Green Tomato Energy: FiT Cut Publicity is Dampening Demand* (29 Aug., 2012), http://www.solarpowerportal.co.uk/news/green_tomato_energy_fit_cut_publicity_is_dampenin g_demand_2356.

65 Chiara Armeni, *Case studies on the implementation of Directive 2009/31/EC on the geological storage of carbon dioxide* (Nov., 2011), UNIVERSITY COLLEGE LONDON CARBON CAPTURE LEGAL PROGRAMME, http://blogs.ucl.ac.uk/law-environment/files/2012/11/Chiara-Armeni-CCLP-EU-Case-Studies-UK-2011.pdf, at 11.

66 *Id.*

renewable projects in general.[67] The rationale of their argument is that once a new technology becomes established, the production costs fall and profitability increases. This in turn decreases the public appetite for the continued payment of subsidies from the state, which leads to increasing pressure on politicians for commensurate policy and regulatory reform. It is clear that the economic austerity measures following the recent financial crisis only add to this pressure. Standard and Poor's report that they have witnessed precisely this effect in operation in the Czech republic.[68]

3.1.6. State Aid

The UK was a first mover in adopting national legislation for CCS regulation with the result that a national legal framework for CCS activity was enacted in the 2008 Energy Act. However, this preceded the European CCS Directive which subsequently had to be transposed into UK law. Whilst such directives give member states a degree of flexibility in implementation, in order to preserve legal harmonisation within the single European market, measures may not be transposed into national law in a way which is less stringent than the terms of the Directive as by so doing they may give the commercial undertakings in that state a competitive advantage against operators in other member states. In addition, provisions of the European Treaty preclude State Aid to commercial entities unless it is had prior approval by the European Commission or falls under a de minimis exemption.[69] Looking specifically at transposition of the provisions regarding post-closure transfer of responsibility for long term carbon dioxide storage, monitoring, verification and liability from private sector operators to the state, the Storage of Carbon Dioxide (Termination of Licences) Regulations 2011 provide for the relevant responsibilities to be transferred to the competent authority. This includes the transfer of any leakage liabilities incurred by the licence holder prior to termination of the licence, where payment of the corresponding debts had not been determined prior to the transfer. [70] Armeni Notes that "this provision

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67 *Why Regulatory Risk Hinders Renewable Energy Projects in Europe* (23 May, 2012), STANDARD AND POOR'S RATINGS SERVICES CREDIT WEEK, http://www.standardandpoors.com/spf/swf/ereports/usutilities/Utilities/document/res/66f2267 4f8236a720007808beeac4b89/05_TOC_Utilities_CreditWeek.pdf, at 41-44.

68 *Id*, at 43.

69 Treaty on the Functioning of the European Union, Arts. 107-109, 13 Dec., 2007, 2008/C 115/1.

70 Regulation 14(2) Storage of Carbon Dioxide (Termination of Licences) Regulations 2011.

explicitly allows a wider transfer of responsibility than is provided for in the Directive, adding civil and common law liabilities to the transfer process."[71] The result is that this additional protection may be viewed as State Aid, and any benefits or additional protections enjoyed by UK entities to which the provisions may apply may be subject to repayment in the event of a successful legal challenge. In addition, the provision may be open to legal challenge by the European Commission as an error in transposition. In either event, this introduces an element of legal uncertainty for investors in the key area of long term liability.

3.1.7. Moral Hazard

Closely connected to the previous sections on post-closure environmental liability and State Aid, is the issue of moral hazard – this arises where the likelihood of some unplanned and undesirable event occurring increases, because those responsible for its occurrence are insulated, in whole or in part, from liability for the consequential harm arising from the event. As a result, their conduct is less prudent or robust, because they will not be required to face the full financial cost of their choices, actions or inactions. Moral hazard has been attributed as a major contributing factor to the most recent financial crisis in the western economy, due to many financial institutions being deemed to be "too big to fail".[72] As a result, when the consequences of their unsustainable conduct have led to massive financial losses, that loss has fallen to the public sector to make good. Some analysts have already identified the potential for moral hazard to become a risk factor in the operation of the emerging CCS industry.[73] If the long term liabilities are transferred to the public sector post closure at less than the full economic cost of their eventual realisation, there will be less incentive for the industry to select the safest sites with the least propensity for long term seepage of carbon dioxide, and short term savings may receive a greater weighting in site selection than long term safely.

It could be argued that the ability to transfer any degree of financial liability to the public sector would be an incentive to the investors and developers. This would appear to be the rationale behind the UK governments' stance on post closure transfer of liability in the transposition

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71 The Carbon Dioxide Regulations, *supra* note 60.
72 PAUL MASON, MELTDOWN: THE END OF THE AGE OF GREED (1st ed. 2009).
73 C Trabucchi and L Patton, *supra* note 40, at 3.

of the CCS Directive as discussed above.[74] However, if this leads to the operation of moral hazard, and poor long term decision making, this could lead to public alienation from the technology, as has been observed in the banking sector, or failure of adoption by other states, thereby limiting long term market growth. Because of the obvious parallels between the time frames of storage, it is reasonable to assume that the financial mechanisms for long term liability in the nuclear waste management industry may be instructive. A report by the International Association for Environmentally Safe Disposal of Radioactive Materials indicates that member countries have adopted a range of legal approaches, at the centre of which is the intention that there should be full implementation of the polluter pays principle.[75] In all cases either an industry led private body or a government implemented public body has been constituted to administer a financial mechanism implemented to ensure that adequate funding is in place to cover long term liabilities even after individual operators have ceased activities. This includes mechanisms in some countries to provide additional financial guarantees from operators in the event that there is a deviation from projected costs.[76]

3.1.8. Competition Law

A review by Vedder reports on an analysis of the operation of a developing and mature CCS sector from an EC Competition Law perspective.[77] The author raises a number of areas of potential concern, among which is the consideration of the availability of access by competitors or new market entrants to CCS related infrastructure. This concern arises because of the differences in maturity of markets between the CCS sector and for example, the gas industry, the latter having an

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74 See Section 3.1.6.

75 *Report on Radioactive Waste Ownership and Management of Long Term Liabilities in EDRAM Member Countries* (2005), INTERNATIONAL ASSOCIATION FOR ENVIRONMENTALLY SAFE DISPOSAL OF RADIOACTIVE MATERIALS, http://www.edram.info/fileadmin/edram/pdf/EDRAMWGonWOwnershipFinal_271005.pdf

76 "In Sweden, the Act on Financing of Future Expenses for Spent Nuclear Fuel establishes a system of guarantees from waste producers in order to compensate possible future possible deviations in the total costs." *Id,* §4.2 at 11.

77 Hans Vedder, *An assessment of carbon capture and storage under EC competition law,* (2008) EUROPEAN COMPETITION LAW REVIEW 29(10), 586-599 (hereinafter Hans Vedder).

established network of pipelines before the market was opened to competition. The inclusion within the CCS Directive of provisions that regulate third party access to carbon dioxide transport pipelines and storage sites,[78] and a governing dispute settlement mechanism,[79] are cited by Vedder as evidence that the European Commission considers such competition concerns to be more than theoretical. However, whilst the Directive addresses the objectives to be achieved regarding free and open access, it leaves substantial room for variation in the mechanism of implementation. This will lead to inevitable differences between member state regimes, and potentially different levels of predictability on the outcome of access requests. More worrying in competition terms, is that a member state could potentially attempt to reserve all storage capacity if this were deemed necessary to meet GHG reduction target by substantial reliance on CCS. Vedder makes a case that whilst such a stance may be contrary to the legal requirement of free movement of goods under European law, it may be permissible if the state could successfully argue that the overriding interest of proximity and self-sufficiency established in the Walloon Waste case should be extended to cover carbon dioxide sequestration.[80] It is hard to imagine at this early stage of industry development, that this legal issue represents a significant risk, but as the pressure to mitigate GHG levels increases it may become a greater concern.

3.1.9. Eligibility for Carbon Credits in High Value Markets

This article has previously noted the recent agreement by parties to the Kyoto Protocol of the UNFCCC that GCCS projects will be considered eligible projects under the Clean Development Mechanism.[81] However, there is still some uncertainty regarding how the credits so generated may then be utilised within the European Carbon Market.[82] The European Directive governing the operation of this market stipulates that only carbon credits generated from CDM project in "Least Developed Countries" (LDCs) will be accepted within the European environmental

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78 Art 20, the EU CCS Directive, *supra* note 47.

79 Art 21, the EU CCS Directive, *supra* note 47.

80 Hans Vedder, *supra* note 77, at 598.

81 Section 3.1.1 above.

82 *International Climate Change Legislation &CDM: CCS in the Clean Development Mechanism*, UNIVERSITY COLLEGE LONDON CARBON CAPTURE LEGAL PROGRAMME, http://wwws-uat.ucl.ac.uk/cclp/ccsinCDM.php.

trading scheme.[83] This may only be overcome if there is an enabling agreement between countries that are eligible for CDM projects but are not LDCs, such as China, and the EU, which would allow the credits to be traded in the European market. Failure to reach such agreement may undermine the adoption of GCCS projects under the CDM in the countries which are arguably best enabled to host them, and most in need of abatement of coal generated carbon emissions due to their degree of reliance on this fuel and their strongly growing economies.

3.2. Dispersed CCS: Ocean Fertilisation

3.2.1. Introduction

The transfer of carbon dioxide from the atmosphere to the world's oceans is a natural and ongoing process, which occurs at a rate of approximately two gigatonnes of carbon per year. To put this in context, this has been estimated as between a third and a half of all anthropogenic carbon generation per year.[84] The theory underpinning the process of ocean fertilisation is that if this process could be accelerated, then there could be a more rapid reduction of carbon dioxide levels in the atmosphere. By adding nutrients such as nitrogen, phosphorus or iron, which would otherwise be rate limiting on the growth of marine life such as phytoplankton, the rate of carbon absorption by these organisms can be increased thereby converting dissolved carbon dioxide to biomass.[85] The practice has, however, turned out to be far less simple than the theory and the outcomes of early studies have revealed a number of negative consequences to this activity including disruptions to ecosystems and encouragement of growth of species that produce methane and nitrous oxide and methane, which are also potent GHGs.[86]

3.2.2. International Law

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83 Directive amending Directive 2003/87/EC so as to improve and amend the greenhouse gas emission allowance trading scheme of the Community, Art. 11a(4), 23 Apr., 2009, 2009/29/EC.

84 HJ Herzog, *What future for carbon capture and sequestration?*, (2001) 35(7) ENVIRONMENTAL SCIENCE AND TECHNOLOGY 48A (2010).

85 Rosemary Rayfuse, *Drowning our sorrows to secure a carbon free future? Some international legal considerations relating to sequestering carbon by fertilising the oceans*, (2008) UNSWLJ 9 31(3) 19-930 (2008) (hereinafter Rosemary Rayfuse).

86 *Id*, at 920.

Given that the required scale of ocean fertilisation needed to achieve meaningful carbon dioxide reductions would be massive,[87] the majority of the activity would involve dumping of nutrients into the high seas (HS). In addition to UNCLOS, which relevant provisions of international agreements such as the London Protocol would govern such activity. Parties to this agreement have already stated opposition to ocean fertilisation due to uncertainty over effectiveness and environmental impacts.[88] The Convention of Biological Diversity is also applicable to this activity, and in 2008 the parties to the agreement stated their opposition to any commercial operations, and even the authorisation of any research activities was heavily proscribed with even permitted operations in coastal waters needing to be subject to thorough environmental impact assessment, to be strictly controlled and not to be associated with any commercial outputs.[89]

More recently, the Intergovernmental Oceanographic Commission, a UNESCO Body, produced a report on ocean fertilisation which summarised the key scientific and technical challenges with this technology.[90] This document further confirmed the relevance of UNCLOS, CBD and the London Protocol, and expressed the view that the precautionary principle must apply to the regulation of this technology. It recognised that the coastal state exemption noted above was a result of the fact that states had responsibility for regulating pollution and preventing marine environmental damage within their own waters.

There currently exists, therefore, a clear position on the status of commercial ocean fertilisation operations in HS international waters. The literature provides a clear and compelling summary of why the operations of

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87 It has been estimated that an area the size of the Southern Ocean would need to be fertilised each year to achieve biosequestration of approximately three per cent of the annual carbon dioxide emissions: Rosemary Rayfuse, *supra* note 85, at 920.

88 *Report of the 29th Consultative meeting of contracting parties to the convention* (2007), IMO, http://113.30.141.54/mmd%20ch%206%200%200%200%200%201%20cloud%20server%20files/MMD-CData/India%20Policy%20on%20GHG%20Emissions/GHG/IMO%20DOC%20ON%20GREENHOUSE%20GAS/download%20of%20MEPC%20on%20GHG/LC%2029-17.pdf, at 5.

89 Rosemary Rayfuse, *supra* note 85, at 921.

90 DWR Wallace et al., *Ocean Fertilization: A Scientific Summary for Policy Makers*, UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION, INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION AND SURFACE OCEAN LOWER ATMOSPHERE STUDY: INTERNATIONAL PROJECT OFFICE, http://unesdoc.unesco.org/images/0019/001906/190674e.pdf.

this technology are clearly contrary to the terms of UNCLOS with respect to the control of pollution,[91] and as mentioned, both the London Protocol and CBD ban commercial operations in the HS. Despite this, there are a number of commercial operators in ocean fertilisation undertaking varying degrees of activity. Whilst the US Company Climos has made a public commitment not to undertake demonstration level activities until it can obtain a permit to do so from a signatory country to the London Protocol,[92] other companies such as the Australian based Ocean Nourishment Corporation (ONC) have moved towards commercial operations, conducting test scale dumps of urea in the Sulu sea off the Philippines. Commercial scale operations were only halted as a result of public protest.[93] The US based company Planktos made a submission to the US Environmental Protection Agency regarding proposed iron fertilisation of the ocean. When the EPA raised concerns that the activity may violate the US legislation which enacts the London Convention and Protocol, the company responded to the effect that the activity would no longer be conducted from a US – flagged vessel.[94] In this instance, it is not legal uncertainty that is the issue, but the willingness of states to recognise their obligations under such international conventions and enforce the law against companies in their territory or ships under their flag, combined with the ability of companies to conduct their activities from ships flagged under states which are not parties to the prohibitive conventions.[95]

3.2.3. Eligibility for Carbon Credits in High Value Markets

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91 Rosemary Rayfuse, *supra* note 85, at 923-924.

92 "Climos has made a commitment to obtaining a permit from a signatory to the International Maritime Organization London Convention on Ocean Dumping (IMO LC) prior to any actual demonstration experiment. If we cannot obtain one, and one is required, we will not move forward.": See *Frequently Asked Questions About Ocean Fertilization: What is Climos' Funding/Business Model?,* http://www.climos.com/faq.php#9 .

93 *Ocean Nourishment: Sacrificing the Marine Environment for Profits and the Need for SBSTTA 13 to Take a Stand* (20 Feb., 2008), http://searicepgr.blogspot.in/2008/02/ocean-nourishment-sacrificing-marine.html.

94 Raphael Sagarin et al., *Iron fertilization in the Ocean for Climate Mitigation: legal, economic and environmental challenges*, NICHOLAS INSTITUTE FOR ENVIRONMENTAL POLICY STUDIES, DUKE UNIVERSITY, http://www.whoi.edu/fileserver.do?id=27586&pt=2&p=28442 (hereinafter Raphael Sagarin)

95 The Australian government has been reluctant to recognise that ONC has conducted operations in breach of the aforementioned international conventions: Rosemary Rayfuse, *supra* note 85, at 922.

Projects where carbon sequestration occurs as a consequence of ocean fertilisation, are not eligible projects under the Clean Development Mechanism of the Kyoto protocol and at this juncture, there are no formal markets that will trade carbon credits generated by this technology. Until regulatory regimes, such as Kyoto permit this technology to generate verified carbon credits, it means that they are relegated to the voluntary carbon market sector, which is subject to much weaker quality controls and safeguards regarding the validity of the certified carbon reduction.[96] That being said, the 2012 report on the State of the Voluntary Carbon Markets indicated a cumulative global spend of around $2.5bn on voluntary carbon credits.[97] Thus for lower investment technologies such as this (compared with GCCS for example) the returns available from such markets may still represent a sufficient return on investment.

3.3. Deep or Shallow Sea Injection of Carbon Dioxide

3.3.1. Introduction

Rather than inject compressed carbon dioxide into geological formations, there is scientific interest in sequestering it by simply injecting it at great depth onto the ocean floor where models show that by virtue of its density and slow exchange rate with the sea water, it will remain sequestered for hundreds of years, or even longer at greater depths.[98] This implies injection into the water column in the HS either from vessels or via pipeline, but there is also scientific evidence that the injection may be possible in much shallower waters, such as those in the TS, EEZ or CS, where the gradient of the coastal geology combined with currents will carry the dense carbon dioxide to deeper waters.[99]

3.3.2. International Law

The analysis of applicable law has revealed a legal uncertainty within UNCLOS which is peculiar to this technology. The required scale of carbon dioxide dumping, combined with the effects that such large

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96 Raphael Sagarin, *supra* note 94, at 9.

97 *State of Voluntary Carbon Markets 2012,* Ecosystem Marketplace: A Forest Trends Initiative, http://moderncms.ecosystemmarketplace.com/repository/moderncms_documents/sovcm_postlaunchreport_2012.1.pdf .

98 Ken Caldeira and Makoto Akai, *Ocean Storage*, in the IPCC Report, *supra* note 2.

99 Paul Haugan and Helge Drange, *Sequestration of CO_2 in the deep ocean by shallow injection*, Nature, 357, 318-320 (1992).

concentrations would be likely to exert on living marine resources, will mean that the carbon dioxide will be deemed to be "pollution" under the terms of UNCLOS.[100] This means that coastal state agreement will be required for such "dumping" operations within the TS and EEZ, but as ever discretion to allow this activity will be subject to other international agreements such as OSPAR and the London Convention and Protocol and the general duty under UNCLOS not to cause damage by pollution to other states territories or marine areas beyond the national jurisdiction.[101] However, Churchill expresses the view that storage of carbon dioxide via a pipeline to the EEZ will not fall within the rights of the coastal state or any other state, leading to a degree of uncertainty regarding licensing and control in the absence of a specific regulatory regime in the coastal state.[102] Churchill further concludes that the permissibility of storage on the HS will depend on whether it can be considered a freedom of the HS, but that other international agreements will be relevant in this matter. In this regard, the parties to the OSPAR Convention, governing pollution of the North East Atlantic, adopted a decision in 2007 to prohibit the storage of carbon dioxide streams in the water column or on the seabed.[103] In other areas of the world's oceans with less restrictive international regimes, the situation may be less clear.

4. OCEAN BASED ENERGY GENERATION

4.1. STATIC STRUCTURES OR INSTALLATIONS: OFFSHORE WIND FARMS

4.1.1. Introduction

There are a number of renewable energy generation technologies which are either capable of being located in the marine environment, such as wind farms, or are by necessity situated offshore, namely tidal and wave energy capture technologies and Ocean Thermal Energy Conversion (OTEC) platforms. Whilst each of these have specific technical features that

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100 Art. 194, the UNCLOS, *supra* note 9.

101 Art. 194(2), the UNCLOS, *supra* note 9.

102 RR Churchill, *International Legal Issues Relating to Ocean Storage of CO_2: A Focus on the UN Convention on the Law of the Sea*, in BILL ORMEROD (ed.), OCEAN STORAGE OF CARBON DIOXIDE (1st ed. 1996).

103 OSPAR Decision 2007/1 to Prohibit the Storage of Carbon Dioxide Streams in the Water Column or on the Sea-bed, available at http://www.ospar.org/v_measures/browse.asp.

could be analysed in terms of applicable legal issues, it is beyond the scope of this article to review all of them. They do, however share many common aspects, such as:

- Being sited in a permanent location of defined area and impact
- Being substantially physical in nature, that it, not presenting a significant chemical pollution element (such as oil wells or carbon dioxide storage sites)
- Requiring connection to a national or international grid system
- Creating environmental impact during construction or installation phases
- Creating environmental impact via noise or vibration during the operational phase.

This section will therefore review key legal issues associated with marine wind energy generation, on the basis that at least some issues will be transferable to the other static marine energy technologies, and also because it is the most mature marine renewables industry, and therefore offers the opportunity to examine legal issues which may only arise as the technology becomes more widely adopted.

4.1.2. Environmental Ampact Assessment

The offshore wind industry is now becoming well established in certain areas of the globe, with Europe and the UK in particular, already having a significant number of operational fields.[104] Experience in the operation of the EIA as part of the development consent process confirms the importance of the risks identified with respect to GCCS EIAs,[105] namely that the impacts on species protected under the Habitats Directive must be given particular attention by the consenting authority. In the latest round of offshore wind farm consents issued in the UK, two projects were approved and one was rejected on the basis that the proposed development had the potential to impact on Sandwich terns – seabirds afforded protection under European environmental law.[106]

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104 Christopher Barclay, *Wind farm consents- offshore* (17 Jul., 2012), available at http://www.parliament.uk/briefing-papers/SN05088 (hereinafter Christopher Barclay).

105 See Section 3.1.3 above.

106 Christopher Barclay, *supra* note 104, at 6.

4.1.3. Regulatory risk

A review of offshore wind challenges for the insurance industry identified key business risks, and concluded that business interruption risks or delays to start-up represented the most significant category of risk for many companies (and hence for their investors).[107] Whilst one might imagine that this would arise principally from the normal course of business operations rather than for any legal reason, this is not always the case. In Germany, legal issues and uncertainties have been the principal cause of a major delay in wind farm operation. The central issue concerns the connectivity of the wind farms to an offshore grid, and the inability of the company responsible for their construction and provision to finance their timely availability. Legal uncertainty subsequently lay in the matter of liability arising from the consequent financial losses of the wind farm operators, and the industry view has been summarised as being that "without clear and binding regulatory systems the dynamics of the entire market can come to a standstill and threaten investor confidence." [108] The German government has responded to this legal challenge and has recently passed a draft bill to regulate this issue, due to come into force in January 2013. Specifically this bill grants wind farm operators damages claims against the transmission system operators who are responsible for grid connection, particularly for any delay to, or interruption in grid connection.[109] This emphasises the importance of examining potential legal risks associated with the entire supply chain and market pertaining to a given technology.

Another area of regulatory risk is that of regulated subsidies as previously discussed with regard to CCS.[110] It is reported that since 1997, 85% of wind based renewable energy systems have been installed with feed in tariffs. This collective wind energy based infrastructure (of which only a minority is marine based) represents a private investment of $120bn.[111] Any

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107 *Offshore wind challenges for the Insurance industry* (10 May, 2011), CHARTIS, http://www.aimu.org/MARINE_INSURANCE_ISSUES/OffshoreWindFarms.pdf.

108 Ritesh Gupta, *German Offshore Wind: Lack of Bonding Regulatory Systems Threatens Investor Confidence* (3 Sept. 2012), http://social.windenergyupdate.com/offshore-wind/german-offshore-wind-lack-binding-regulatory-systems-threatens-investor-confidence.

109 Gunther Bredow and Daniel Klofat, *German Federal Cabinet: New liability regime for interrupted or delayed grid connection of offshore wind farms* (Sept., 2012), http://www.worldservicesgroup.com/publications.asp?action=article&artid=4756.

110 See Section 3.1.5 above

111 Paul Gipe, *Status of feed-in tariffs in Europe 2010* (14 Feb., 2011),

changes to future tariffs as a result of fiscal retrenchment will be an inevitable risk factor in future investment.

4.2 MOBILE ENERGY GENERATION

An interesting consideration under this heading is the right of ships powered by Ocean Thermal Energy Conversion (OTEC) technology to innocent passage through TS of coastal states other than their flag state. A view expressed by Gao and Juang is that a ship using OTEC as its main motive power would enjoy the rights of innocent passage as would a ship under sail, each effectively using the "free goods" of wind and ocean thermal gradient respectively as forms of propulsion. However, should the ship be using OTEC not as a main means of propulsion, but actively harvesting energy, the view is that it would need permission from the coastal state.[112] An early and detailed analysis of OTEC operations was presented by Reisman in 1981, and revealed a number of regulatory and jurisdictional issues that needed to be resolved.[113] Many remain extant as in some territories, OTEC regulations which were enacted were never utilised for commercial operations and have since been removed from the statute books.[114]

5. LEGAL UNCERTAINTY AND INVESTMENT RISK

There is no precise legal definition of what constitutes an "investment risk". Investment in any type of commercial project is made on the basis of financial modelling founded on a series of assumptions. The more information that is available about the business opportunity and the market it will operate in, and the greater degree of certainty that exists around the assumptions, the higher the probability that the anticipated return will be realised. In conducting due diligence on the opportunity, the investor will seek to identify any risk factors, including legal issues, which

http://www.renewableenergyfocus.com/view/15892/status-of-feed-in-tariffs-in-europe-2010/.

112 Anton Gao and Katherine Juang, *The international legal regime on the exploitation of offshore geothermal, wave, tidal and OEC energy: in search of legal challenges and solutions*, (2006) I.E.L.T.R., 11/12, 259-268.

113 W Michael Reisman, *Key International Legal Issues with Regard to Ocean Thermal Energy Conversion Systems* (1981), 11 CALIFORNIA WESTERN INTERNATIONAL LAW JOURNAL 425 (1981).

114 The 1980 OTEC Act enacted in the US was active for 15 years , but no licence was ever granted and so the legislation was rescinded in 1996.

may either prevent or reduce the projected return on investment, or worse still, may expose the investor to liability leading to a net loss. This article has identified a number of areas influenced by the operation of law relating to ocean based carbon reduction technologies, where such risks may arise, including:

- Uncertain financial liability, given the lack of ex ante information regarding the operation of payments for post-closure transfer of liability to the competent authority in respect of GCCS storage sites.
- Uncertain environmental liability,
- Lack of certainty on regulated subsidies, potentially having a significant impact on commercial viability of projects and the level or return on investment
- Lack of certainty regarding the liability for damages of delays caused by other parties in the supply chain
- Potential exposure to liability attributed to the receipt of State Aid
- Risk to security of access to licensed sites or other financial loss due to the possibility of judicial review of the grant of development permits
- Risk of damage to market by the operation of moral hazard where the regulatory regime is too permissive in any respect
- The operation of competition law in respect of access to emerging infrastructure and pipelines

6. Concluding Remarks

The operation of the law of the sea is complex, and the various technical features of ocean based technological responses to climate change, and the different zones in which they operate throw up some interesting questions of legal interpretation. However, this article has demonstrated that in many instances, it is uncertainty in various aspects of regulation imposed by the governing coastal states which will present the most significant barriers to investment if left unaddressed. Given the relative immaturity of these industries, however, compared to the oil and gas industries, for example, many coastal states have made significant strides towards resolving areas of uncertainty and implementing robust and clear regulatory regimes. The pressure to accelerate the further adoption of both

carbon mitigation technologies and renewable energy sources will no doubt continue to act as a spur to the expedient resolution of some of the remaining issues summarised above.

CONCEIVED IN RIO, BORN AND RAISED IN GENEVA, FREQUENTING PARIS, YET TO GO AROUND THE WORLD: THE REGULATION OF TRADITIONAL MEDICINAL KNOWLEDGE

Senai W. Andemariam[*]

> *The 'traditional knowledge' concept finds its place in such seemingly unrelated debates as natural disasters, intellectual property, heritage preservation, curriculum development, poverty eradication or biodiversity management.*
>
> *Bureau of Public Information, UNESCO*

> 'ets yqietl, 'ets yehieyw. (an herb kills an herb cures)
>
> An old Ge'ez (Ethiopic) proverb

ABSTRACT

The regulation of traditional medicinal knowledge is yet to become comprehensive at international and national levels. Despite its increasing global significance, traditional medicine has hitherto attracted only a fragmented regulatory attention by international and national organs which focus on the various interests that traditional medicine represents. Although the harmonized regulation of the environmental, health, intellectual property, trade, cultural heritage, human rights, development and other interests on traditional medicine can be a complicated assignment, this article will attempt to show that fragmented regulation of traditional medicine is not an alternative to its comprehensive regulation at international and national levels.

1. INTRODUCTION

It can't be underestimated: the global impact of traditional medicines (TM). The World Health Organization (WHO) estimates that TM, inclusive of herbal medicines, are used *in every country around the world* in some capacity and that "in much of the developing world, 70–

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95% of the population rely on these traditional medicines for primary care."[1] Specific to medicinal plants – which are part of TM – it is estimated that at least 25% of all modern medicines are derived, either directly or indirectly, from medicinal plants and that in the case of certain classes of pharmaceuticals, such pharmaceutical classes as anti-tumoral and anti-microbial medicines, this percentage may be as high as 60%.[2] Some sources claim that nearly a quarter of all pharmaceutical products worldwide[3] that are derived from plant sources originate from traditional knowledge.[4]

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1 M. M. Robinson & X. Zhang, *The World Medicines Situation 2011, Traditional Medicines: Global Situation, Issues and Challenges*, WHO/EMP/MIE/2011.2.3, 2011, at 1, *available at* http://apps.who.int/medicinedocs/documents/s18063en /s18063en.pdf (Last visited December 20, 2012) (By way of examples, the 2001 survey shows that 90% of the population in Ethiopia, 75% in Mali, 70% in Myanmar, 70% in Rwanda, and 60% in Tanzania and Uganda use TM as for primary care whereas 80% of the population in Germany, 70% in Canada, 49% in France, 48% in Australia and 42% in the US have used complementary and alternative medicine at least once. (*See* at 3)); WHO, *WHO Traditional Medicine Strategy 2002-2005*, WHO/EDM/TRM/2002.1, 2002, at 11, *available at* libdoc.who.int/hq/2002/WHO_EDM_TRM_2002.1.pdf (Last visited December 20, 2012) (it states that: "In many Asian countries TM continues to be widely used, even though allopathic medicine is often readily available. In Japan, 60–70% of allopathic doctors prescribe kampo medicines for their patients. In Malaysia, traditional forms of Malay, Chinese and Indian medicine are used extensively. In China, traditional medicine accounts for around 40% of all health care delivered and is used to treat roughly 200 million patients annually. For Latin America, the WHO Regional Office for the Americas (AMRO/PAHO) reports that 71% of the population in Chile and 40% of the population in Colombia has used traditional medicine… A survey of 610 Swiss doctors showed that 46% had used some form of complementary and alternative medicine, mainly homeopathy and acupuncture… In the United Kingdom, almost 40% of all general allopathic practitioners offer some form of complementary and alternative medicine referral or access…");
See also Traditional Medicine, *available at* http://www.who.int/mediacentre/ factsheets/ fs134/en/ (Last visited June 12, 2012); UNESCO, *Draft Preliminary Report on Traditional Medicine and its Ethical Implications*, SHS/EST/CIB-17/10/CONF.501/3 (2010), at 3-4, *available at* http://unesdoc.unesco.org/images /0018/001895/189592e.pdf (Last visited December 20, 2012) (The Report states that "[i]n the United States of America 158 million of the adult population use alternative medicinal products and, according to the Commission for Alternative and Complementary Medicines, people in the United States of America spent US $17 billion on traditional remedies in 2000. In the United Kingdom, $230 million are spent yearly on alternative medicine.").

2 Robinson and Zhang, *supra* note 1, at 2.

3 *See* Johanna Von Braun & M. P. Pugatch, *The Changing Face of the Pharmaceutical Industry and Intellectual Property Rights*, THE JOURNAL OF WORLD INTELLECTUAL PROPERTY, Vol. 8(5), 599 (2005) (To give a quantitative description of the staggering sales of the pharmaceutical industry, and thereby to understand how, comprising 25% of the source of global pharmaceutical products, traditional medicinal knowledge is such a rich asset:
"The pharmaceutical industry has undergone tremendous change in the last two decades. World production in pharmaceuticals grew from U.S. $ 70 billion in 1975 to U.S. $ 150

There is a global increase in interest in the use of TM and parallel to this the global expenditure on TM is also on the increase. In 2005, for instance, the global market for traditional medicines was estimated at US$ 60 billion.[5] It increased to US$ 83 billion in 2008[6] and is expected to reach US$ 114 billion by 2015.[7] The WHO states that TM is used "as prescription or over-the-counter medications, as self-medication or self-care, as home remedies, or as dietary supplements, health foods, functional foods, phytoprotectants..."[8]

According to the WHO, TM, also known as "complementary", "alternative", "non-conventional", "soft", or "parallel" medicine, which has been in practice for millennia, is defined as "health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses and maintain well-being."[9] Although, as the definition clarifies, TM comprises many practices that qualify as such, TM itself is a small category of a wider socio-cultural division – traditional knowledge (TK). TK, based on a

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billion in 1990 and to more than U.S. $ 300 billion in 2000. Sales of prescription pharmaceutical drugs world-wide grew from U.S. $ 40 billion in 1972 to about us$ 420 billion in 2002 and are expected to rise to U.S $ 700 billion in 2008. pharmaceutical research and development (R&D) expenditures in the largest industrial blocs – the United States, the European Union and Japan – more than tripled to between 1990 (€ 18 billion) and 1997 (€ 55 billion).").

4 Bulletin of the Medicinal Plants and Drug Discovery Research Center of the University of Asmara (2005) at 2.

5 WHO, *supra* note 1, at 12.

6 Robinson and Zhang, *supra* note 1.

7 *Global Traditional Medicine Market to Reach US$114 Billion by 2015- According to a New Report Published by Global Industry Analysts, Inc.*, San Francisco Chronicle, SFGate, January 10, 2012, *available at* http://www.sfgate.com/business/ article/ Global-Traditional-Medicine-Market-to-Reach-2455084.php (Last visited August 20, 2012).

8 Robinson and Zhang, *supra* note 1.

9 WHO, *Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A World Wide Review*, 2001, at 1-2, *available at* http://apps.who.int/medicinedocs/pdf/h2943e/h2943e.pdf (Last visited December 20, 2012) (In another document the WHO defines TM as: "the sum total of the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevention, diagnosis, improvement or treatment of physical and mental illnesses."); WHO, *General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine*, WHO/EDM/TRM/2000.1 (2000), at 1, *available at* http://whqlibdoc.who.int/hq/2000/ WHO_EDM_TRM_2000.1.pdf (Last visited December 20, 2012) (The latter is the definition adopted by UNESCO in its works on the establishment of ethical framework on the practice of TM); *See also* UNESCO, *supra* note 1, at 2.

widely-accepted defection from the World Intellectual Property Organization (WIPO), comprises such categories of tradition-based knowledge systems, creations, innovations and cultural expressions as agricultural, scientific, technical, ecological, medicinal and biodiversity-related knowledge as well as expressions of folklore (in the form of music, dance, song, handicrafts, designs, stories and artwork), elements of languages (such as names, geographical indications and symbols) and movable cultural properties.[10] From the environmental point of view, however, the Convention on Biological Diversity (CBD) defined TK as "...knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity..."[11]

Despite the increase in the importance and relevance of TK in general and TM in particular, however, their comprehensive regulation is yet to be realized. In a 2010 article, I had briefly described the lack of comprehensiveness at international level as follows:

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10 WIPO, *Intellectual Property Needs and Expectations of Traditional Knowledge Holders: WIPO Report on Fact Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)*, 2001, at 25, *available at* http://www.wipo.int/tk/en/tk/ffm/report (Last visited December 20, 2012).

11 Convention on Biological Diversity, Article 8(j), December 29, 1993, 1760 UNTS 79, *available at* http://www.cbd.int/doc/legal/cbd-en.pdf (Last visited November 20, 2012) [Hereinafter CBD] (This clause has been used as the *de facto* definition for defining traditional knowledge in the CBD Secretariat documents); CBD Secretariat, *Handbook of the Convention on Biological Diversity* (including its Cartagena Protocol on Biodiversity) (2005, 3rd ed., Decision VI/10, at 784, 786 (in the realm of preservation); Decision IV/9, at 521, Decision V/16, at 625 (in the realm of intellectual property) [Hereinafter 'CBD Handbook']; CBD Secretariat, *Traditional Knowledge and the Convention on Biological Diversity, available at* http://www.cbd.int/doc/publications/8j-brochure-en.pdf (Last visited December 20, 2012) (Currently, the CBD uses the following working definition for traditional knowledge.
"Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, *health*, horticulture, and forestry" (*emphasis added*));
See also CBD Secretariat, *Article 8(j): Traditional Knowledge, Innovations and Practices*, at 1, *available at* www.hreoc.gov.au/social_justice/international_docs /pdf/art_8j_convention_biological_diversity.pdf (Last visited December 20, 2012).

> International organizations representing various interests have been awakened by the call to regulate TMK [traditional medicinal knowledge]. However, a notable defect in the efforts by these organizations is that there seems to be little comprehensiveness in their efforts since most of these organizations view and regulate traditional medicinal practices from their perspectives only. The lack of comprehensive international regulation of TMK may have arisen from two causes. Firstly, existing international instruments cover TMK as part of a larger mass – traditional knowledge. Secondly, even the instruments directly related to TMK, such as those developed by the [WHO], cover a specific interest – health, in the case of the WHO, for example – and fail to address other interests, such as trade and property rights, which are indispensable in regulating TMK.[12]

2. THE INTERESTS AROUND TM: SEPARATION WALLS NOT BUILDING BLOCKS YET

TK, inclusive of traditional medicinal knowledge, represents a number of interests, each deserving its own regulatory protection. As the interest and detailing of the regulation of the respective interests by various international organizations (IO) increased in the previous two decades, especially the last decade, the isolation of each interest from the other related interest also increased. Each of such organizations, at times with a passing concern of the others, focuses on the regulation of TK to such an extent that it is now difficult to have a clear picture of a comprehensive international regulation of TK, TM included. By way of example, the following table shows how different IO have attempted to dwell on or regulate TK/TM from their own perspectives.

International Organization	Perspective on TK (inclusive of TM)
United Nations	preservation of heritage of indigenous peoples[13]

12 S. W. Andemariam, *Legislative Regulation of Traditional Medicinal Knowledge in Eritrea vis-à-vis Eritrea's Commitments under the Convention on Biological Diversity: Issues and Alternatives*, LAW, ENVIRONMENT AND DEVELOPMENT JOURNAL, Vol. 6(2), 133 (2010), *available at* http://www.lead-journal.org/content/10130.pdf (Last visited December 20, 2012).

13 Gervais, D. J., *Spiritual but not Intellectual? The Protection of Sacred Intangible Traditional Knowledge*, CARDOZO JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW, Vol. 11, 478

WIPO	intellectual property
World Trade Organization (WTO)	international trade
CBD	conservation of biodiversity
United Nations Environment Programme (UNEP)	environment in general[14]
WHO	health[15]
United Nations Educational, Scientific and Cultural Organization (UNESCO)	Human heritage
International Labor Organization (ILO)	equal entitlement to human rights of indigenous and tribal peoples[16]
United Nations Conference on	use of traditional knowledge for development[17]

(f.n. 58-59) (2003) (The UN recognized the recognition of the rights of indigenous people to their heritages. Professor Gervais notes:

The [1981] United Nations draft Declaration on the Rights of Indigenous Peoples is perhaps the most relevant international document in this area. Still in draft form, its Article 29 currently reads as follows: 'Indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property. They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, *medicines*, knowledge of the properties of fauna and flora, oral traditions, literatures, designs and visual and performing arts (*emphasis added*).');

See also S. Ragavan, *Protection of Traditional Knowledge*, MINNESOTA INTELLECTUAL PROPERTY LAW REVIEW, Vol. 2(2), 33-35 (2001) (for more on the Draft Declaration); In September 2007, the UN General Assembly adopted the UN Declaration on the Rights of Indigenous Peoples and in 2008 the UN Development Group (UNDG) issued the UNDG Guidelines on Indigenous Peoples' Issues.

14 WIPO & UNEP, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Associated Traditional Knowledge*, *available at* www.wipo.int/tk/en/publications/769e_unep_tk.*pdf* (Last visited December 20, 2012).

15 *See* WHO, *WHO Guidelines for Assessment of Herbal Medicines*, *available at* http://apps.who.int/medicinedocs/en/d/Jh1813e/3.html#Jh1813e.3.1 (Last visited December 20, 2012) and WHO, *WHO Monographs on Selected Medicinal Plants*, *available at* http://apps.who.int/medicinedocs/en/d/Js2200e/ (Last visited December 20, 2012) (The WHO has made tremendous effort in assisting its Members in developing national policy and regulatory frameworks and enhancing safety, efficacy and quality standards for traditional medicines, as well as establishing effective access mechanisms and the rational use of traditional medicines.).

16 *See* Convention Concerning Indigenous and Tribal Peoples in Independent Countries (Convention No. 169), September 5, 1991, 72 ILO Official Bull. 59, *available at* http://www.ilo.org/ilolex/cgi-lex/convde.pl?C169 (Last visited December 20, 2012) (adopted by the ILO, the convention built upon the 1957 Indigenous and Tribal Peoples Convention (Convention No. 107)); *See* Ragavan, *supra* note 13, at 30-32 (for a more detailed analysis).

17 UNCTAD, *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions*, 2004, *available at* http://www.unctad.org/en/docs/ditcted10_en.pdf (Last visited December 20, 2012) (The document discusses the importance of traditional knowledge in health and agriculture, the

Trade and Development (UNCTAD)	
World Bank	assistance for development of traditional knowledge[18]

It is natural, therefore, that some aspects of the regulation of TK/TM which touch upon the interest of two or more of these international institutions can be the cause of clash of interests. For example, the requirement of disclosure in patent applications that derive from TK has been a subject of intense debates at the WTO and the CBD. Moreover, the WTO Ministerial Conference had instructed the review of the relationship between the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and the CBD.[19] The cooperation between the CBD Secretariat and related IO falls along the same line of debates.[20] The enhancement and sustainable management of the global wealth that is TK (TM), however, cannot be attained without harmonizing the respective efforts by said organizations. Following is a brief description of some of the interests on TK/TM and the respective international works thus far conducted.[21]

2.1 ENVIRONMENT

The 1992 Rio Summit brought about the concept of sustainable development, i.e., the preservation of the environment is and should be part

modes of preservation and protection of traditional knowledge, and means of harnessing traditional knowledge for the benefit of the holders of the knowledge through trade and development).

18 *See* WHO, *supra* note 1, at 38 (for WHO's recognition of the role of the World Bank in enhancing traditional knowledge).

19 WTO, *Doha WTO Ministerial 2001: Ministerial Declaration,* 14 November 14, 2001, ¶¶ 17-19, *available at* http://www.wto.org/English/thewto_e/minist_e /min01_e/mindecl_e.htm (Last visited December 20, 2012).

20 CBD Secretariat, *Article 8(j): Traditional Knowledge, Innovations and Practices, supra* note 11, at 3 ("The [CBD] Secretariat also cooperates with other UN agencies, such as the Food and Agriculture Organization, World Intellectual Property Organization, World Trade Organization, UN Forum on Forests, Commission on Human Rights Working Group on Indigenous Populations, and the UN Conference on Trade and Development. *This collaboration ensures that issues concerning the protection and application of traditional knowledge, innovations and practices, and the involvement of indigenous and local communities in biodiversity-related activities, are given the widest possible focus.*" (*emphasis added*)).

21 Andemariam, *supra* note 12, at 133-136.

and parcel of all development efforts.[22] The sustainable development of traditional knowledge, as part of the broader universe of biodiversity, was therefore made one of the subjects of the Declaration[23] and Agenda 21,[24] another product of the 1992 Rio Summit. The Rio Summit can claim to be the first international attempt to recognize the significance of TK/TM and provide for its protection to the benefit of humanity by considering it part of the human biodiversity – hence the phrase in the title of this article that the international regulation of TK/TM was born in Rio.[25]

The CBD Secretariat has now incorporated the basic principles of environmental preservation for TK and a lot of progress has been made thus far.[26] As a reflection of Rio Principle 22, the pertinent CBD provisions on TK provide that all undertakings related to the conservation and sustainable development of TK should involve indigenous and local communities.[27] Building on the relevant CBD provisions, the Bonn Guidelines[28] specify

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22 Rio Declaration on Development and Environment, Principles 2-4, June 14, 1992, UN Doc. A/CONF.151/26 (vol. I) [Hereinafter Rio Declaration].

23 Rio Declaration, Principle 22:

> "Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development".

24 Agenda 21: Programme of Action for Sustainable Development, ¶¶15, 26, June 14, 1992, U.N. GAOR, 46th Sess., Agenda Item 21, UN Doc A/Conf.151/26.

25 Report of the UN Department of Economic and Social Affairs, Division for Social Policy and Development, Secretariat of the Permanent Forum on Indigenous Issues, *Report of the International Workshop on Traditional Knowledge held in Panama City, 21-23 September 2005*, PFII/2005/WS.TK/10, at 3 (As a testament to the Rio commitment to the enhancement of TK, the Plan of Implementation issued at the World Summit on Sustainable Development (Johannesburg 2002),

> …[s]pecific entries on 'traditional/indigenous knowledge' or 'indigenous and local resource management' appear in no less than 19 paragraphs covering a broad range of concerns: poverty eradication [6e, h]; natural disaster mitigation [35f]; climate change [36i]; agriculture [38d, h, r]; mountain ecosystems [40e]; biodiversity [42h, j, k, l, p]; forests [43h]; health [47h]; Africa [57, 58d, 64c]; and science and technology [103a].).

26 *See*, for instance, CBD Handbook, *supra* note 11 (Decisions III/14, IV/9, V/16, VI/10 and VII/16, VII/19, VII/29 of the Conference of Parties of the CBD).

27 *See*, for instance, CBD, *supra* note 11, Preamble at ¶ 12, Articles 8(j), 10(c) and 15(7).

28 CBD Handbook, *supra* note 11, Annex to Decision VI/24 of the Conference of Parties, at 889-905 (Formally called the *Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising out of Their Utilization* and developed in 2000 by the CBD Secretariat, the guidelines were introduced to further elaborate the access-benefit sharing (ABS) formula of the CBD [Hereinafter Bonn Guidelines).

how indigenous and local communities can participate in the conservation, utilization and benefit sharing from utilization of their TK.[29]

The daunting task of providing for an international regime for the conservation and sustainable development of TK has ultimately convinced the Conference of Parties (COP) of the CBD to recommend, in 1999, the establishment of a working group on CBD Article 8(j)[30] and related provisions.[31] Reporting directly to the COP, the Working Group has been very active in inviting representatives of local and indigenous communities in its meetings and integrating their ideas in its decision making.[32]

As an ongoing priority of the CBD, the COP requested the Ad Hoc Working Group on Access and Benefit-sharing with the collaboration of the Article 8(j) Working Group '... to elaborate an international regime on access to genetic resources and benefit sharing with the aim of adopting an instrument/instruments to effectively implement the provisions in Article 15 and Article 8(j) of the Convention and the three objectives of the

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29 Bonn Guidelines, (Bonn Guideline No. 11(j) has as its objective:

To contribute to the development by Parties of mechanisms and access and benefit-sharing regimes that recognize the protection of traditional knowledge, innovations and practices of indigenous and local communities, in accordance with domestic laws and relevant international instruments...

The Guidelines, for the purpose of ABS process, divide the interested parties into three categories: users (those seeking access), providers (the local and indigenous communities) and stakeholders. The Guidelines then proceed with specifying the respective obligations of Contracting Parties and these three interested groups. *See* Guidelines 16-21, 30-31 and 48).

30 CBD, *supra* note 11, Article 8(j) (the most important provision regarding sustainable development of TK - reads:

Each Contracting Party shall, as far as possible and as appropriate...

Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.).

31 CBD Handbook, *supra* note 11, at 139 (provides the mandates of the Working Group (actually named an Ad Hoc Open-ended Inter-sessional Working Group)) and at 520-21(Decision IV/9).

32 *See* CBD Handbook, *supra* note 11, at 521(Decision IV/9(2)) (This was one of the obligations assigned to the Working Group in Decision IV/9; WIPO and UNEP, *supra* note 14, at 25 (moreover:

"As a result of the work carried out by this Working Group, in particular at an expert meeting held in Bonn, Germany in October 2001, at the sixth CBD Conference of the Parties held in the Hague, the Netherlands in April 2002, Member States were in a position to adopt the so-called 'Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization").

Convention'.[33] As a result of this and other measures, many governments are now:

> …in the process of implementing Article 8(j) of the Convention through their national biodiversity action plans, strategies and programmes. A number of governments have adopted specific laws, policies and administrative arrangements for protecting traditional knowledge, emphasizing that the prior informed consent of knowledge-holders must be attained before their knowledge can be used by others.[34]

The Heads of State and Government who met in Rio de Janeiro to commemorate the 20th anniversary of the birth of CBD recognized the contribution of TK in the sustainable development of biodiversity[35] and thus affirmed their continued support to the enhancement of TK.[36]

Although it was in Rio that the world was initiated into the conservation and development of TK, it is the Geneva institutions (WTO, WIPO and WHO) who have given the subject new and broader dimensions.

2.2 Intellectual Property and Trade

The prism of TK/TM is also being looked at from the perspective of intellectual property (IP) and trade. The appropriate international forum in this regard has been the TRIPS Council of the WTO which handles IP-international trade matters. The reason for incorporating TK in the TIPRS universe is that TK by its nature represents items evolving out of communal wisdom (i.e., intellectual) as owned by the community (i.e., property) with the potential for international commercialization (i.e., international trade) as regulated by a relevant international body (i.e., the WTO). Along this line, it has long been argued whether a given piece of TK (a medicinal plant and treatment by it, a traditional dancing style, an indigenous clothing style, an engraving symbolizing a communal ritual etc.) intended to be commercialized can best be protected by the regime of: copyright and

33 CBD Handbook, *supra* note 11, at 1210 [Decision VII/19(D)(1)].

34 CBD Secretariat, *Traditional Knowledge and the Convention on Biological Diversity*, *supra* note 11, at 3-4.

35 United Nations Conference on Sustainable Development, *The Future We Want*, outcome of the Rio+20 Conference, A/CONF.216/L.1 (2012), at 38, ¶ 197.

36 *Id.* at 10, ¶ 58.

related rights;[37] patents, plant variety protection and utility models;[38] unfair competition and trade secrets;[39] industrial designs;[40] trademarks and certification marks;[41] or geographical indications[42] under the TRIPS system.

Contrasted with the construction of contemporary IP under the TRIPS and other IP-related international treaties, however, it has been difficult to identify a fitting IP regime for protecting TK.[43] This difficulty has convinced many to call for the development of a system protection specially developed for TK (a *sui generis* system) under the TRIPS Agreement. Following the 2001 Doha Declaration instruction of the TRIPS Council to, *inter alia*, examine the protection of TK (paragraph 17-19 of the Declaration), the Council has organized meetings and requested submissions to that effect. Five sets of submissions were made to the TRIPS Council showing the carrying understanding of the submitting groups on the protection of TK.[44] The groups supporting the establishment of a *sui generis* system for TK basically underlined that TK can be equitably protected only by provision of proprietary rights.[45] This view has, however, not been without an objection from some WTO Members.[46] The TRIPS Council then summarized the contents of the proposed *sui generis* system for TK and folklore.[47] The African Group, deeming TK as an IP, went a step further and introduced a Draft Decision on Traditional Knowledge.[48]

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37 *See* WTO, *The Protection of Traditional Knowledge and Folklore,* WTO Document IP/C/W/370/Rev.1, at 13-14.

38 *Id.* at 14.

39 *Id.*; Ragavan, *supra* note 13, at 22-25 (Ragavan believes that trade secret law is possibly the best system of protection for TK and describes how trade secrets can be employed to protect traditional knowledge.).

40 WTO, *supra* note 37.

41 WTO, *supra* note 37, at14-15.

42 WTO, *supra* note 37, at 15.

43 WTO, *supra* note 37; *See also* D. Gervais, *Traditional Knowledge & Intellectual Property: a TRIPS Compatible Approach*, MICHIGAN STATE LAW REVIEW140-41, 149-56, 158 (2005); Ragavan, *supra* note 13, at 13.

44 *See* http://www.wto.org/english/tratop_e/TRIPS_e/art27_3b_e.htm (Last visited December 20, 2012) (These were the (1) the US; (2) the EC Group; (3) the African Group; (4) Switzerland; and (5) the Group consisting Bolivia, Brazil, Cuba, Dominican Republic, Ecuador, India, Peru, Thailand, Venezuela).

45 WTO, *supra* note 37, at 16.

46 WTO, *supra* note 37, at 16.

47 WTO, *supra* note 37, at 16-17; *See also*, *Taking Forward The Review of Article 27.3(B) of The TRIPS Agreement: Joint Communication from the African Group,* WTO Document IP/C/W/404, at 7-9.

48 *See* WTO, *supra* note 37, at 17 (for a summary of the contents of the draft).

The academia has also been active in analysing a *sui generis* system for TK. Professors Long, Gopalakrishnan and Downes argue that without developing a new system, TK may be protected by extending and enforcing the right of recognition of origin to the TK.[49] Professor Gervais, states, on the one hand, that conventional IP system may not be suitable for TK[50] and argues, on the other hand, that introducing a TRIPS-based *sui generis* system for TK will be very difficult,[51] concluded that only a 'Ministerial Declaration on Traditional Knowledge and Trade' could solve the quandary.[52]

2.3 TK AS IS

WIPO can claim to have marched too far in the realm of international regulation of TK. It has been recognized by a number of IO such as the COP of the CBD[53] and the WTO[54] for its advancement in working on TK. In October 2000, the WIPO General Assembly approved the establishment of an Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) with mandates to work on TK in general, access and benefit sharing of genetic resources and the protection of expressions of folklore (EoF).[55] Through numerous meetings,[56] the IGC has developed a voluminous work and a rich database in the progress of its mandate. Between 2000 and 2004, the IGC focused on gathering comparative information on TK, preparing

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49 *See* Ragavan, S., *supra* note 13 at 25-27.

50 Gervais, *supra* note 43, at 151-56.

51 Gervais, *supra* note 43, at 160-61.

52 Gervais, *supra* note 43, at 161-62 and 162-63 (for his draft declaration).

53 WIPO, *Certain Decisions of the Seventh Meeting of the Conference of the Parties to the Convention on Biological Diversity Concerning Access to Genetic Resources and Benefit-Sharing,* WIPO Document WIPO/GRTKF/IC/6/11, at 2-3 (referring to CBD's COP Decision VII/19 preambular paragraph 10 and the Decision's paragraphs 7-9).

54 WTO, *supra* note 37, at 6-7.

55 WIPO, *Matters Concerning Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore*, WIPO Document WO/GA/26/6, at 5-7 (It should be noted, however, that the mandate of the IGC has from time to time been amended or expanded by the WIPO General Assembly. Its latest mandate for 2012-13 biennium is available at http://www.wipo.int/export/sites/www/tk/en/ documents/pdf/decision_assemblies_2011.pdf (Last visited December 20, 2012). Details on the functions and meetings of the IGC may be read at http://www.wipo.int/tk/en/igc/index.html (Last visited December 20, 2012).).

56 *See* http://www.wipo.int/meetings/en/topic.jsp?group_id=110 et. al. (Last visited December 20, 2012) (for reports of the meetings. As of August 2012, the IGC conducted twenty-two formal sessions and dozens of other meetings).

basic outlines and conducting technical studies and surveys.[57] Between 2004 and 2007, the IGC developed policy objectives[58] and core principles[59] in furtherance of implementing its mandate. Between 2008 and 2012, the IGC has embarked upon gap analyses[60] and the implementation stage for the establishment of an international regime for the protection of TK, genetic resources and EoF.[61]

2.4 HEALTH

In 2004, the WHO released the WHO Medicines Strategy 2004-2007 as an update to an earlier 2000-2003 strategy. Carrying a distinct vision,[62] the goal of the WHO regarding medicines is:

> to help save lives and improve health by ensuring the quality, efficacy, safety and rational use of medicines, *including traditional medicines*, and by promoting equitable and sustainable access to essential medicines, particularly for the poor and disadvantaged (*emphasis added*)."[63]

The Medicines Strategy has seven components the second of which is *national policies on traditional medicine and complementary and*

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57 IGC Documents wipo/grtkf/ic/5/inf/3, wipo/grtkf/ic/5/3, wipo/grtkf/ic/2/5, wipo/grtkf/ic/5/inf/2, wipo/grtkf/ic/5/inf/4, wipo/grtkf/ic/5/7, wipo/grtkf/ic/5/8, wipo/grtkf/ic/6/4/rev., wipo/grtkf/ic/5/5, wipo/grtkf/ic/5/inf 5 (page 2), wipo/grtkf/ic/5/6, wipo/grtkf/ic/6/8, wipo/grtkf/ic/5/9 , wipo/grtkf/ic/5/inf 5 (page 3), wipo/grtkf/ic/5/10, wipo/grtkf/ic/5/inf 5, at 3, wipo/grtkf/ic/5/11, wipo/grtkf/ic/6/10, wipo/grtkf/ic/5/inf 5, at 4, wipo/grtkf/ic/4/14, wipo/grtkf/ic/5/inf 5, at 4, wipo/grtkf/ic/6/11 and wipo/grtkf/ic/6/9.

58 WIPO, *The Protection of Traditional Knowledge: Outline of Policy Options And Legal Elements,* IGC Document WIPO/GRTKF/IC/7/6/Annex 1.

59 *See* WIPO, *The Protection of Traditional Knowledge: Revised Objectives and Principles,* IGC Document WIPO/GRTKF/IC/9/5 and its Annexes.

60 *See* http://www.wipo.int/tk/en/igc/gap-analyses.html (Last visited December 20, 2012) (for details).

61 *See* IGC, *Draft Gap Analysis on the Protection of Traditional Knowledge, available at* www.wipo.int/export/sites/www/tk/en/igc/pdf/tk_gap_analysis.pdf, at 1-42 (Last visited December 20, 2012) (as an instance); IGC Document, *Revised Provisions for the Protection of Traditional Knowledge, available at* http://www.wipo.int/export/sites/www/tk/en/igc/doc/tk_gap_analysis.doc. (Last visited December 20, 2012).

62 WHO, *WHO Medicines Strategy: Countries at Core (2004-2007),* at 3, *available at* libdoc.who.int/hq/2004/WHO_EDM_2004.5.pdf, (Last visited December 20, 2012). (the vision of the strategy is "that people everywhere have access to the essential medicines they need; that the medicines are safe, effective, and of good quality; and that the medicines are prescribed and used rationally").

63 *Id.* at 4.

alternative medicine.[64] Earlier in 2002, the WHO had issued the 2002-2005 TM Strategy which is based on the standards set for essential medicines. The document initially refers to the increase in the number of countries regulating herbal medicines[65] while lamenting at the relatively fewer number of countries with policies on TM. Next, after listing the positive features of TM/CAM,[66] the document identifies the challenges in the progress of the four elements of Medicines Strategy, i.e.: (a) national policy and regulatory framework; (b) safety, efficacy and quality; (c) access and (d) rational use of TM in WHO Member States.[67] The document then elaborates key needs for implementation of the four elements of the Strategy[68] and ends by identifying the components, expected outcomes and success indicators for each element of the Strategy upon which the 2004 Medicines Strategy builds on its vision on TM.[69] In order to implement the TM Strategy, the WHO has been engaging itself in a number of activities[70] including:

- assisting Members to develop national TM strategies and legislations;[71]
- establishment of a Collaborating Center for TM at the pharmacy college at the University of Illinois;[72]
- preparation of three Monographs on Selected Medicinal Plants;[73]

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64 *Id.* at 22-23.

65 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 3, 15 (Regarding the regulation of herbal medicines, the document reads: "the number of WHO Member States with regulations related to herbal medicines increased from 52 in 1994 to 64 in 2000", whereas regarding policies, it states: "Relatively few countries have developed a policy on TM and/or CAM — only 25 of WHO's 191 Member States.").

66 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 19 (These positive features include: diversity and flexibility; accessibility and affordability in many parts of the world; broad acceptance among many populations in developing countries; increasing popularity in developed countries; comparatively low cost; low level of technological input; and growing economic importance).

67 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 20.

68 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 21-26.

69 WHO, *supra* note 62 at 48-54.

70 *See* http://www.who.int/medicines/areas/traditional/en/ (Last visited December 20, 2012) (for more details).

71 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 29.

72 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 34 (The Center has "a database on medicinal plants that contains coded information on natural products from 150 750 references. These include references relating to ethnomedicine, pharmacology of extracts and pure compounds, and phytochemistry.").

73 WHO, *WHO Monographs on Selected Medicinal Plants* WHO, *supra* note 15.

- assisting countries conduct research on and enhance their TM potentials;[74]
- producing other key documents related to TM;[75]

Regional offices of the WHO in Africa, Americas, Europe, South East Asia and Western Pacific and have also been active in intensifying the efforts.[76] In November 2008, the WHO Congress on Traditional Medicine which met in Beijing issued what is called the Beijing Declaration which was aimed at advancing the protection of TM which the WHO has long considered as one of the resources of primary healthcare system.[77]

2.5 Cultural Heritage of Humankind

Yet from another perspective, TK is, under the aegis of UNESCO in Paris, being considered the common heritage of humanity worthy of protection as such.[78] Following the 1999 World Conference on Science held in Budapest, UNESCO has recognized TK as a "fragile and diverse world heritage" which needs plans to preserve, protect, promote and conduct research on it.[79] UNESCO embarked upon the heritage-oriented protection of TK by establishing such organs as the Division of Cultural Policies and Intercultural Dialogue, the Intangible Cultural Heritage Section and the Local and Indigenous Knowledge Systems (LINKS) Project. Earlier, in 1998, UNESCO honored examples of intangible cultural heritage by creating an international program called the Proclamation of Masterpieces of the Oral and Intangible Heritage of Humanity to list, by way of proclamation, various items of intangible cultural heritage are identified to encourage dialogue on cultural diversity.[80]

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74 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 32.

75 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 51-53 (for a list of around 40 documents).

76 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 29-31.

77 *See* http://www.who.int/medicines/areas/traditional/TRM_BeijingDeclarationEN.pdf (Last visited December 20, 2012) (for the declaration).

78 UNESCO, Bureau of Public Information, *Traditional Knowledge*, at 2, *available at* http://www.unesco.org/bpi/pdf/memobpi48_tradknowledge_en.pdf (Last visited December 20, 2013) (The 2001 UNESCO Universal Declaration on Cultural Diversity and the 2005 Convention on the Protection and Promotion of the Diversity of Cultural Expressions, adopted in 2005, recognize TK systems as part of humanity's cultural heritage.).

79 Report of the UN Department of Economic and Social Affairs, *supra* note 25, at 3.

80 *See* Convention for the Safeguarding of the Intangible Cultural Heritage, Article 8(1), October 17, 2003. 2368 U.N.T.S. 3. (The Proclamations were later incorporated into the

Via the adoption, in October 2003, of the Convention for the Safeguarding of the Intangible Cultural Heritage, TK has sprouted another branch to be protected as a human cultural heritage[81] at national and international levels. One of the inventions of the 2003 convention was to create List of Intangible Cultural Heritage in Need of Urgent Safeguarding and Representative List of the Intangible Cultural Heritage of Humanity.[82] The UNESCO has registered some forms of TM in the Representative List such as the Andean cosmovision of the Kallawaya, an ethnic group of priest-doctors in Bolivia, which was "recognized for its medical and pharmaceutical knowledge of approximately 980 species of plants that grow in the mountains and valleys north of La Paz," (2008),[83] the Vimbuza healing dance in Malawi (2008),[84] the Acupuncture and moxibustion of

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Representative List of the Intangible Cultural Heritage of Humanity mandated to be created by this Convention).

81 *Id.* Article 2(1) (it defines and explains "intangible cultural heritage" as:

the means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.);

Id. Article 2(2) (intangible cultural heritage manifests itself in such forms as: oral traditions and expressions, including language as a vehicle of the intangible cultural heritage; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe; and traditional craftsmanship.)

82 UNESCO, *Intangible Heritage List*, *available at* http://www.unesco.org/culture/ich/index.php?pg=00011 (Last visited August 27, 2012) (According to UNESCO, the List of Intangible Cultural Heritage in Need of Urgent Safeguarding is "composed of intangible heritage elements that concerned communities and States Parties consider require urgent measures to keep them alive." The Representative List of the Intangible Cultural Heritage of Humanity is "made up of those intangible heritage practices and expressions help demonstrate the diversity of this heritage and raise awareness about its importance.").

83 UNESCO, *Andean Cosmovision of the Kallawaya*, *available at* http://www.unesco.org/culture/ich/index.php?lg=en&pg=00011&RL=00048 (Last visited August 27, 2012).

84 UNESCO, *Vimbuza Healing Dance*, *available at* http://www.unesco.org/culture/ich/index.php?lg=en&pg=00011&RL=00158 (Last visited August 27, 2012).

traditional Chinese medicine (2010)[85] and the traditional knowledge of the jaguar shamans of Yuruparí in Colombia which involves healing (2011)[86]

Specific to TM, the UNESCO has also been working from another dimension: the ethical implications of the practice of TM. In early 1990s, UNESCO launched the Programme on Ethics of Science and Technology. The Division of Ethics of Science and Technology is mandated to work on the development and implementation of activities outlined in the Programme. UNESCO has two statutory bodies in bioethics- the International Bioethics Committee (IBC), created in 1993, and the Intergovernmental Bioethics Committee (IGBC), created in 1998. The Division serves as the Secretariat for both bodies.[87] Parallel to this, in 2005, UNESCO unveiled the Universal Declaration on Bioethics and Human Rights which "addresses ethical issues related to medicine, life sciences and associated technologies as applied to human beings, taking into account their social, legal and environmental dimensions."[88] Relevant to TM/TM, Article 17 of the Declaration states that:

> Due regard is to be given to the interconnection between human beings and other forms of life, to the importance of appropriate access and utilization of biological and genetic resources, to respect for traditional knowledge and to the role of human beings in the protection of the environment, the biosphere and biodiversity.

In the last few years, at least since March 2010,[89] the IBC has, based on its general mandate and the Declaration, been thoroughly focusing on the ethical implications of TM[90] and include it in its work programs. As at

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85 UNESCO, *Acupuncture and Moxibustion of Traditional Chinese Medicine*, *available at*, http://www.unesco.org/culture/ich/index.php?lg=en&pg=00011&RL=00425 (Last visited August 27, 2012).

86 UNESCO, *Traditional Knowledge of the Jaguar Shamans of Yuruparí*, *available at* http://www.unesco.org/culture/ich/index.php?lg=en&pg=00011&RL=00574 (Last visited August 27, 2012).

87 *See* Division of Ethics of Science and Technology Sector for Social and Human Sciences of UNESCO, *Ethics of Science & Technology at UNESCO*, SHS/EST/GEOBS/2008/PI/1, (2008), at 1-7 (for description of the IBC and the IGBC).

88 Universal Declaration on Bioethics and Human Rights, Article 1(1), adopted at the 33d session of UNESCO's General Conference 2005, UN Doc. SHS/EST/BIO/06/1.

89 *Report of the Meeting of the IBC Working Group on Traditional Medicine and its Ethical Implications (WGTMEI)*, SHS/EST/10/CIB/WG-3/3, (2010), at 1.

90 *Id.* at *1-2* (The WGTMEI has been careful to "avoid duplicating the work of other UN agencies such as the WHO and WIPO" and that the objectives of its report (issued in

its 19th Session in September 2012, the IBC has been engaged in discussions to develop basic guidelines for the establishment of an ethical framework in order to fully integrate the practice of TM into health systems. In its 2012-13 work program, the IBC will continue its work on TM and its ethical implications, with the aim of finalizing its report on this topic at its 19th session in 2012.[91] On a related development, the UNESCO Chair in Traditional Medicine was established in 2000 at Bukhara State Medical Institute in Uzbekistan, one of the objectives of which is to promote an integrated system of research, training, information and documentation activities in the field of traditional medicine.

2.6 Cultural Identity

One cannot have a complete view of the practice of TM, and TK in general, without admitting the sense of belonging that it creates to those who believe in and practice the various types of TK/TM. WIPO, for instance, made a brief reference to the anthropological and spiritual interest embodied in TK as follows:

> Indigenous and local communities justly cherish traditional knowledge (TK) as a part of their very cultural identities. Maintaining the distinct knowledge systems that give rise to TK can be vital for their future well-being and sustainable development and for their intellectual and cultural vitality. For many communities, TK forms part of an holistic world-view, and is inseparable from their very ways of life and their cultural values, spiritual beliefs and customary legal systems. This means that it is vital to sustain not merely the knowledge but the social and physical environment of which it forms an integral part.[92]

2.7 Consequences of the Fragmentation

September 2010) were "to outline the situation and related ethical issues, without necessarily elaborating on issues relating to intellectual property and the protection of traditional knowledge, both of which are already under discussion and negotiation in other bodies".)

91 IBC, *Work programme for 2012-2013*, *available at* http://www.unesco.org/new/en/social-and-human-sciences/themes/bioethics/international-bioethics-committee/work-programme-for-2012-2013/ (Last visited August 28, 2012).

92 WIPO, *Intellectual Property and Traditional Knowledge*, Booklet No. 2, *available at* www.wipo.int/freepublications/en/tk/920/wipo_pub_920.pdf, at 1.

The respective, yet fragmented, interests of various IO in furthering knowledge on and regulating the development of TM has been discussed above. Such fragmented interest has had and will continue to have its negative effect on the conservation and sustainable exploitation of TM.

The first of such effects is on the common understanding that the international community must have on TM. Is TM primarily a health, environment, IP, heritage or trade item so it can be developed along that line? As reflected in the still-ongoing CBD-TRIPS debates at the WTO regarding TK, the developed versus the developing/least developed countries will have varied views on the nature of TM. In the process of harmonization of international TM works, the developing/least developed countries are expected, as originators of the majority of TM in the world and as they did with TK, to view TM as a tool for earning much sought foreign capital for their development while the developed world may view it more from its environmental/biodiversity angle. Such views will in turn reflect in the passion and drive in the respective IO that focus in the various TM interests discussed above.

Linked to the varied view on the nature of TM, the second negative effect of the fragmentation is the respective fragmented development of TM in the international arena. So far none of the IO which are working on TM has taken the initiative to work with other IO which have shown interest in developing TM from their perspective. The works at the WHO have progressed significantly in comparison to those at UNESCO and other organizations; hence, we see that at the international level a part of TM (health) has grown disproportionately in comparison to its other parts (environment, heritage etc.) which are equally vital for the wholesome development of TM. If the other IO start to handle TM as part of their treaty obligations (for example the UNESCO viewing TMK as part of international heritage), not only a developmental but also a legal conflict can arise at the international level on the handling of TM. The case of TK which is being handled by the CBD Secretariat and the WTO has as part of their respective treaty obligations and still being debated about its harmonious handling (the Global North focusing on the IP aspect and the Global South focusing on the environmental aspect) is an example that may be mentioned in this regard. When it comes to TM, the health aspect of TM has the potential to be in conflict with the trade aspect of it, the IP aspect with the environment aspect, the heritage and cultural aspect with the trade aspect and so on.

Another consequence of said fragmentation is the confusion that may arise as to the most effective means of reaction and international protection of TM in cases of it being threatened with loss, misappropriation or biopiracy. Most of the IO working on TM have some form of protection against these events, but as significant an international heritage as TM is, a single, viable and multi-edged reaction and international is yet to be established.

2.8 The Fragmentation on TM in Light of the North-South Divide

The views expressed by the members in the various IO of interest on TM is part of the north-south divide, the socio-economic and political division between the wealthy countries in the Global North and the poorer developing/lease developed countries of the Global South. One of the faces of the prism of the north-south divide is the trend – exacerbated by global capitalism – by which the north exploit the south – often by use of international legal instruments – even where the resources for the wealth of the north spring from the south. TMK, predominantly of southern origin, has been one of the most frequent fields of such exploitation. The world-famous revocation of the turmeric patent,[93] the challenges to the patents on neem,[94] basmati rice,[95] the *maca*[96] and the appetite-suppressant cactus (hoodia),[97] the dispute following the development of the sports drug Jeevani,[98] and the anticancer drugs vinblastine and vincristine derived from rosy periwinkle are few examples that may be mentioned in this regard.[99]

In the Global South, herbal and other sources of TM are not only medicinal items, but also parts of the cultural identity and anthropological cohesion and often sacred property of the communities that own the

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93 Gerard Bodeker, *Traditional Medical Knowledge, Intellectual Property Rights & Benefit Sharing*, 11 CARDOZO J. INT'L & COMP. L. 785, 788 (2003); *See also*, Ragavan, *supra* note 13, at 11.

94 Ragavan, *supra* note 13, at 12; Olufunmilayo B. Arewa, *TRIPS and Traditional Knowledge: Local Communities, Local Knowledge, and Global Intellectual Property Frameworks*, 10 INTELLECTUAL PROPERTY L. REV. 155, 170-1 (2006).

95 Ragavan, *supra* note 13, at 61 (f.n. 269); Arewa, *Id.*, at 171-2.

96 Bodeker, *supra* note 93, at 797-8; *See also* WIPO, *Patent Referring to Lepidium meyenii (Maca): Responses of Peru (Document submitted by the Delegation of Peru)*, WIPO Document WIPO/GRTKF/IC/5/13.

97 WIPO, *supra* note 96, at 795-6; Arewa, *supra* note 94, at 174.

98 WIPO, Booklet No. 2, *supra* note 92, at 7; *See also*, Arewa, *supra* note 94, at 172-3.

99 Arewa, *supra* note 94, at 172-3.

knowledge. An accidental or otherwise exposure of a western entity to such TMK more often than not triggers the need for individual ownership (through patent or otherwise) of such knowledge and the subsequent profiteering that marks the capitalist world.[100]

Hence, one of the continuing issues mandated by Paragraph 19 of the 2001 Doha Declaration is to look into the protection of TK (inclusive of TK) or, as the TRIPS Council understood it, to look into 'how to deal with the commercial use of traditional knowledge and genetic material by those other than the communities or countries where these originate, especially when these are the subject of patent applications'.[101] The CBD-TRIPS relationship which is part of the Doha mandate has also been continuing (the WTO has records as of April 2011) under serious differences of view between the developed and developing/under developed countries to the extent that the last meetings on the matter were chaired by the WTO Director-General Pascal Lamy himself. Keen to ensure the magnification of the origins of patented TK (most of the time TM):

> *A group represented by Brazil and India and including Bolivia, Colombia, Cuba, Dominican Republic, Ecuador, Peru, Thailand, and supported by the African group and some other developing countries*, wants to amend the TRIPS Agreement so that patent applicants are required to disclose the country of origin of genetic resources and traditional knowledge used in the inventions, evidence that they received "prior informed consent" (a term used in the Biological Diversity Convention), and evidence of "fair and equitable" benefit sharing (*emphasis added*).[102]

In other words, the South intends an amendment of the TRIPS so intellectual property, trade and environmental (biodiversity) aspects of TM can be tied into one package. The proposals of the EU, Switzerland and the US, however, have the common sense of separating the patenting of TK from its biodiversity aspects.[103]

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100 *See* Ulrich Beyerlin, *Bridging the North-South Divide in International Environmental Law*, ZaöRV 66 (2006), at 259-296, *available at* http://www.zaoerv.de/66_2006/66_2006_2_a_259_296.pdf (Last visited December 20, 2012).

101 WTO, *TRIPS: Reviews, Article 27.3(B) and Related Issues: Background and the current situation*, *available at* http://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm (Last visited December 20, 2012).

102 *Id.*

103 *Id.* (for summaries of their proposals).

3. SELECT STATE AND REGIONAL EXPERIENCES IN THE REGULATION OF TK/TM

This section will briefly present the legislations of some countries[104] and regional organizations on TM.

3.1 PHILIPPINES

In 1997, the Philippine government enacted the Traditional and Alternative Medicine Act (TAMA) as Republic Act No. 8423. The Act begins with declaration of a policy to improve and integrate traditional and alternative medicine (TAM) into the health care system, to ensure the ownership of TAM by the indigenous societies and to authorize them to permit access to and share benefits of the exploitation of their knowledge on TAM.[105] After listing its objectives,[106] the Act establishes the Philippine Institute of Traditional and Alternative Health Care [TAHC] (the Institute) which has the principal authority to implement the Act (Sections 5-11). The Act specifically:

- requires the Institute to establish a nation-wide research program on TAM and to formulate standards and guidelines for the manufacture, quality control and marketing of different TAHC materials and products; (Sections 12-13)
- exempts the manufacturers of TAHC products from some forms of taxes; (Section 14)
- establishes a development fund to enhance TAM (Section 15).

3.2 INDIA

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104 WHO, *National policy on traditional medicine and complementary/alternative medicine*, at 12-14, (2005), *available at* http://apps.who.int/medicinedocs/pdf/ s7916e/s7916e.pdf (Last visited December 20, 2012) (There are a lot of countries that have issued legislations on TM/CAM. A survey of the WHO showed that as of 2003, out of the then 141 Member States 54 countries had legislation on TM/CAM and that 42 countries indicated that they were in the process of developing such policies.); *See also*, WHO, *Regulatory Situation of Herbal Medicines: A worldwide Review*, WHO/TRM/98.1, *available at* http://apps.who.int/medicinedocs/pdf/ whozip57e/whozip57e.pdf (Last visited December 20, 2012).

105 TAMA, § 2.

106 TAMA, § 3.

Amended until 1995,[107] the Indian Drug and Cosmetics Act of 1940 is the principal law regarding the import, manufacture, sale and distribution of drugs and cosmetics in India. One of the most important sections of the 1940 Act is the special set of provisions governing Ayurvedic, Siddha or Unani (ASU) drugs.[108] The 1940 Act (in Chapter IVA) primarily establishes the ASU Technical Advisory Board (Section 33C) and the ASU Drugs Consultative Committee (Section 33D) for implementing the regulations on ASU medicinal systems. The Act provides that no person, except the traditional healers *Vaidyas* and *Hakims*, may:

- manufacture for sale or distribution:
  - misbranded, adulterated or spurious ASU drugs; or
  - any ANU drug without a license to produce same; or
- sell, stock or exhibit or offer for sale or distribution any ASU drug manufactured contrary to the Act. (Section 33E)

The 1945 Act further regulates ASU through provisions on:

- application and approval process for license to manufacture ASU Drugs (Part XVI);
- approval process for institutions that want to carry out tests on ASU Drugs (Part XVI-A);
- labeling, packing and limit of alcohol requirements for ASU Drugs (Part XVII);
- government analysis and inspectors for ASU Drugs (Part XVIII);
- standards to be complied with in the manufacture for sale or for distribution of ASU Drugs (Part XIX);
- different forms of application in the ASU Drug enterprises;
- list of poisonous substances under the ASU system;
- good manufacturing practice for ASU Medicines (Schedule T); and

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107 *See* http://cdsco.nic.in/html/copy%20of%201.%20d&cact121.pdf (Last visited December 20, 2012) , at 1 (for the amendments).

108 The Drugs and Cosmetics Act, 1940, *available at* http://cdsco.nic.in/html/copy%20of%201.%20d&cact121.pdf (Last visited December 20, 2012) (Chapter I (3) defines "Ayurvedic, Siddha or Unani drug" as including all medicines intended for internal or external use for or in the diagnosis, treatment, mitigation or prevention of [disease or disorder in human beings or animals, and manufactured] exclusively in accordance with the formulae described in, the authoritative books of Ayurvedic, Siddha and Unani (Tibb) systems of medicine], specified in the First Schedule.]
The First Schedule lists the respective books available for the Ayurvedic, Siddha and Unani (Tibb) systems of medicine: 54, 29 and 13 books respectively.).

- list of machinery, equipment and minimum manufacturing premises required for the manufacture of various categories of ASU medicines.

3.3 European Union

Directive 2004/24/EC was issued on 31 March 2004 to amend an earlier "Directive 2001/83/EC on the Community Code Relating to Medicinal Products for Human Use".[109] The main purpose of Directive 2004/24/EC is to regulate the marketing authorization of herbal medicines through a simplified registration and approval process. To that end, the Directive provides for the establishment of a Committee for Herbal Medicinal Products which, among others, is responsible for the registration and authorization of herbal medicinal products and the establishment of Community herbal monographs relevant for the registration as well as the authorization of herbal medicinal products. The main substance of the Directive is to provide for the application formats and evidences that need to support the application for registration of the herbal medicinal products as well as the composition and functions of the Committee.

3.4 Thailand

By far, the legislation that can be considered more comprehensive than others regarding the protection and promotion of traditional medicine is the Act on Protection and Promotion of Thai Medicinal Intelligence (APPTMI). The Act primarily establishes the Committee on Protection and Promotion of Thai Medicinal Intelligence (CPPTMI). Moreover, APPTMI establishes the Institute for Traditional Thai Medicine to conduct education, research, studies and developmental activities in order to promote and protect traditional Thai medicine. Moreover, the Institute is responsible for collecting data on TM for purposes of registration.

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109 The European Parliament and the Council of the European Union, *Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community Code Relating to Medicinal Products for Human Use, available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:311:0067: 0128:en:PDF (Last visited December 20, 2012) (Among other things such as regulating the safety standards for medicinal products, Directive 2001/83/EC required that: applications for authorisation to place a medicinal product on the market have to be accompanied by a dossier containing particulars and documents relating in particular to the results of physico-chemical, biological or microbiological tests as well as pharmacological and toxicological tests and clinical trials carried out on the product and thus proving its quality, safety and efficacy.).

Chapter 2 of the APPTMI provides for the protection of the IP on the *formulae of traditional Thai drugs* (a sort of patent protection) and the *texts thereon* (a sort of copyright protection) (Section 15). For purposes of registration and protection the APPTMI divides the formulae into three parts:

- National formulae (not protected by IP because the Minister of Public Health ("Minister") believes that these drugs are of special interest to the public) (Section 17);
- General formulae (not protected because they are widely used as not to be linked to an individual or a group of few individuals or the individual ownership thereon has expired) (Section 18);
- Personal formulae (protected after application by the concerned individuals (Section 19).

Section 21 provides that only the inventor, the improver, the developer or inheritor of the individual formulae may apply for protection. Section 22 prohibits the registration of national or general formulae or individual formulae which has been developed on non-medical basis. Sections 23-25 regulate the application procedure and Section 26 states that in cases of doubt the 'first-to-file' gets the protection. Sections 27-32 provide for the rules on the rejection, appeal to the Committee, objection and joint ownership of rights. Sections 32/33 state that the term of protection is the life of the owner of the registration plus fifty years after his death (the death of the last joint owner) and that after expiration thereof, the formulae shall become, by the Minister's declaration, a general formulae. Section 34 lists the rights due to the registrant excepted by the rights of third parties. Section 35 prohibits the transfer, while Section 36 allows the licensing, of the registered rights. Sections 37-43 provide for the revocation grounds and procedures of the granted registrations.

Chapter 3 of the Act introduces the protection of select herbs used for traditional medicines as controlled herbs if such herbs have a research and study value, high economic values and may become extinct (Section 44). Section 45 provides for the set of specified instructions that the Minster may make in order to protect controlled herbs and Section 46 prohibits research on, export, sale or transformation of controlled herbs without a license. Sections 47-56 regulate the licensing regime. Section 57 instructs the Minister to prepare a Plan for Conservation of Herbs to conserve medicinal herbs and the areas from where these herbs are

extracted. Sections 58-65 contain necessary provisions in relation to the conservation of herbs and herbal areas.

3.5 TANZANIA

On 31 December 2002, the late president Benjamin Mkapa signed into law the Traditional and Alternative Medicines Act of Tanzania. The Act begins with the establishment of Traditional and Alternative Health Practice Council as the responsible state organ to implement the Act (Articles 4-8) and constitutes the Council's Registrar (Articles 9-13). Except for persons who practice witchcraft and traditional or alternative medicine (TAM) deemed dangerous (Article 30), the Act provides that TAM practitioners, upon submission of proof of their qualifications, can be registered and allowed to practice by the Council (Articles 14-29). The Act allows TAM practitioners to claim and sue for services rendered (Article 32), obliges them to attend to their patients with the care, diligence and expertise required of their profession (Article 35) and introduces offences and penalties related to unauthorized or improper practice of TAM (Articles 45-48).

3.6 SUMMARY OF NATIONAL EXPERIENCES ON THE REGULATION OF TM[110]

The WHO[111] has attempted to prepare a compendium of the laws of its Member States on TM. The national experiences on regulation of TM can be divided into four groups. In the first group of countries, there are legislations that specifically regulate TM. In the second group, TM is regulated in legislations with deal with the broader scope of TK or public health law. In the third group, TM is a practice heavily restricted by law. In the fourth group of countries, there is no legislative regulation of TM.

The legislations that specifically regulate TM have certain similarities. Firstly, they contain rules on the TM itself. These include the establishment of national herbaria of TM, the preparation of TM pharmacopeia, the verification of toxicity of TM and approval for medication and the sale of TM. Secondly, there are rules concerning the enhancement and protection of TM such as the constitution of the

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110 Andemariam, *supra* note 12, at 152-53 (referred to for the summary).

111 *See* WHO, *Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A World Wide Review* (2001), *available at* http://whqlibdoc.who.int/hq/2001/WHO_EDM_TRM_2001.2.pdf (Last visited December 20, 2012).

institutions that regulate TM, registration of TM, research and development and patenting of TM etc. Thirdly, there are rules for the TM practitioners such as minimum qualifications, education and training, licensing and registration. Finally, there are rules on the practice and organization of the practitioners including the limitations of the practice, code of ethics, formation of associations and punishments for abuses etc.

4. THE WAY FORWARD

The sections discussed above lead towards either of the two conclusions regarding the international and national regulation of TM. Observing that TM captures a variety of interests as described in Section 2, one can either conclude that there is a serious lack of comprehensiveness in the international and national regulatory instruments being developed or that because of the nature of TM, all the interests cannot be tied in a single instrument and hence TM should continue to be regulated from the perspective of the varying interests.

4.1 AT THE INTERNATIONAL LEVEL

The experiences so far amassed at international levels, however, lead us to agree with the first conclusion. Surely, harmonizing so many interests and meshing them together to form a single package at the international level is a difficult job. One can imagine if the environment-trade harmonization process for TK (between the CBD and TRIPS) has not yet been finalized after 11 years, how long it would take to harmonize the works on TM of the WHO, UNESCO, WIPO, CBD Secretariat, WTO, UN, ILO and other IO. Nevertheless, although not tying all interests, there have been some attempts at both levels to harmonize some interests related to TK generally or TM specifically, which trend is a testament to the recognition of international and national regulators that these interests can and must be harmonized in a comprehensive document. A good example that may be cited is the continuous effort at the WTO TRIPS Council to come up with a solution to harmonize the environmental and trade aspects of TK, in other words the relationship between the CBD and TRIPS. Following the instruction in November 2001 by the WTO Ministerial

Council in Doha,[112] the TRIPS Council has been receiving submissions and working on this issue. Similarly, UNESCO's IBD, in developing the framework for ethical implications of the practice of TM, has acknowledged that its "report should lay emphasis on the ethical implications of traditional medicine and avoid duplicating the work of other United Nations agencies such as the WHO and WIPO"[113] and have the CBD's COP and the WTO in recognizing WIPO as the most fitting organization in developing the rules for the protection of TK.[114]

These various organizations have been working at least for the last ten years and for someone who has been following the development of these works, it is time that all these organizations sit together (as some of them have frequently done) and review their respective works relating to TM. At least for the COPs of the CBD, WTO, WIPO, WHO, UNESCO, UNCTAD and the UN/ILO, TM (either as a standalone item or as part of TK) represents environmental, trade, intellectual property, health, heritage, development and human rights interests respectively and each organization must know how the work of the other organizations is related to and affects its works on TK/TM. Then, under the aegis of the UN, a comprehensive document – designing an international treaty may be held as an ultimate goal – for the international conservation and development of the globally significant industry of TM can be developed and its follow up entrusted to a most relevant UN agency. Of the existing UN agencies, the WHO seems the most fitting entity that can bear the responsibility of orchestrating the works of the various UN agencies because of the fact that TM is by its nature more an item of health than one of human rights or cultural heritage. The WHO can integrate such comprehensive document into the voluminous works it has thus far developed on the health aspect of TM.

An alternative step may be the creation, through a treaty, of a separate IO specially assigned to follow the global development of TM. The need for the establishment of such an entity is justified by the fact that

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112 WTO, *Doha WTO Ministerial 2001: Ministerial Declaration*, at 4, WTO Document WT/MIN(01)/DEC/1, *available at* http://www.wto.org/english/ thewto_e/ minist_e/ min01_e/mindecl_e.htm (Last visited December 20, 2012) (Under paragraph 19 of the Doha Declaration, the Ministerial Council was instructed "… to examine, inter alia, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore…").

113 Report of the meeting of the IBC's WKTMEI, *supra* note 89, at ¶¶ 4, 11.

114 See WIPO, *supra* note 53, at 2-3, 6-7.

other organizations such as the WHO would be required to go beyond their mandate (health for the WHO, for example) if they start to work on the other aspects of TM (for instance, its IP aspect). That is, the comprehensive international development and conservation of TM necessitates the establishment of a single IO dedicated to TM. Such independent organization would then develop instruments at the global level which can be duplicated at national levels as detailed in Section 4.2. The organization, thanks to the works that have separately progressed under the other IO, will mainly be entrusted with harmonizing these different works to the development of the single entity of TM. Structurally, the organization can have divisions dealing with health, IP, environment, trade, heritage, tourism and other aspects of TM, each working along with the respective IO active in TM. The IP section can, for instance, in collaboration with WIPO and the CBD Secretariat develop tools for a *sui generis* IP protection of extracts from TM as well as an ABC contract that will be signed with the owners of the TM and any company that wants to make drugs out of the source of TM. Just as the WHO has been assisting countries in developing health-related policies on TM, this separate IO would assist countries to design national TM policies and laws along the same lines as those recommended in Section 4.2. This organization, in collaboration with the other IO, will be the principal source of funding to assist developing and least developed countries in developing TM management systems, database an informatory systems, R&D, training, TM plants herbarium and in the local production of TM.

4.2 At the National Level

As explained in Section 3, there is abundant experience at the national level in regulating TM through legislations. Countries also have national policies[115] and programs[116] regarding TM. However, most of these

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115 WHO, *supra* note 104, at 11-12 (Section 3 dwelled on the legislative experience of some countries. A survey of the WHO showed that as of 2003, out of the then 141 Member States 45 countries had a national policy on TM/CAM and that 51 countries indicated that they were in the process of developing such policies.).

116 WHO, *supra* note 104, at 16-17 (For the purpose of the survey, the WHO defined a program as any program performed at local or national level by the Ministry of Health, other ministries or local bodies, whose mandate is to take specific action in order to achieve objectives in line with national policy or legislation. The survey showed that 40 countries had a national program on TM/CAM and that 31 countries indicated that they were in the process of developing such programs.).

national instruments, usually developed through the assistance of the WHO,[117] focus on the health aspect of TM and the regulation of the practitioners. Only one of the legislations referred to in this article provides for the IP protection of TM and none of them provides for the trade and heritage-oriented protection of TM. A model national legislation that reflects the contents of a comprehensive international TM instrument (section 4.1) is yet to be developed. Following are skeleton drafts of national TM policy and legislation for Eritrea which the author had prepared as part of training on international environmental law.[118] They may be used for the development of a comprehensive national TM policy and legislation.

4.2.1 Traditional Medicine Policy: Main Elements of a Draft

This section is intended to show the structure of a sample, comprehensive national TM policy (NTMP).

(a) *Components of the Policy*

The outline of NTMP could look like the following:

i. Introduction and historical background
ii. Objectives and guiding principles
iii. Vision statements
iv. Mission of the policy
v. Expected outcome
vi. Stakeholders
vii. Main components of the policy:
    A. Recognition of the value of TM
    B. Need for legislation
    C. Organization and training of TM practitioners
    D. Health
        I. *Integration of TM into national healthcare systems*
        II. *Developing safety, efficacy, and quality standards for TM*
        III. *Increasing access to TM*
        IV. *Rational use*
        V. *Code of ethics for practitioners*

117 WHO, *WHO Traditional Medicine Strategy 2002-2005*, *supra* note 1, at 29-34.

118 S. A. Andemariam, *Sustainable Management of Eritrean Traditional Medicinal Knowledge: Commitments under the Convention on Biological Diversity*, (2012), at119-36.

VI. *Relationship between practitioners of TM and modern medicine*

E. Research and industrial development

F. Conservation

I. *Conservation of the knowledge*

II. *Conservation of the tools, materials, plants et.al. used for TM*

III. *Access and benefit sharing mechanisms*

G. Preservation

I. *Heritage*

II. *Tourism*

H. Protection and harnessing

I. *Intellectual property matters*

II. *Trade*

I. Funding

J. International and regional cooperation

viii. National Traditional Medicine Strategy

A. National TM Management System

B. National TM Database and Informatory System

C. National TM Research, Development and Training Center

D. National TM Plants Herbarium

E. Assisting local production of TM

4.2.2 Model TM Legislation: Main Elements of a Draft

Following a national TM policy, TM legislation has to be enacted to give legal teeth to the key elements of the policy. Although TM legislations may differ from country to country, reference to extant TM legislations, some of which have been summarized in Section 3, shows that TM legislations should contain at least the following six key elements.[119]

The first element is the classification of the levels of the traditional medicinal knowledge (TMK). The legislation can classify the TMK as personal, communal or national depending on whether it is limited to individuals, specific communities or the nation at large. In a fashion similar to the practice of compulsory licensing, personal or communal TMK may also be made national because of its significant medicinal advantage to the

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119 Andemariam, *supra* note 12, at 159-61 (referred to for summary).

country or the world at large. In the case of personal or communal TMK, the benefit is due to the custodian(s) of the TMK.

The second element is to provide for the rights due to the TMK and the modes of protection. The legislation can provide for protection either through conventional IP forms or design a *sui generis* form of protection.[120] Either way, the mode of protection must entitle the respective right holders not only to the 'positive' exercise of some rights[121] as well as the right to prevent others from exercising these rights without the holder's permission. The legislation should also provide for the term of the rights as well as rules for ethical practice of TM under the pain of suspension or revocation of the permit to exercise TM.

The third element is conditions for protection, i.e., the legislation will qualify the type of TMK that is entitled to protection. The following standards, based on WIPO and WHO works on TK/TM, may be employed. Firstly, the knowledge must be truly traditional, i.e., it should be have been discovered or developed within the livelihood of the community and passed down from generation to generation provided that the treatment involves systems outside modern medical procedures. Secondly, the TMK must have been practiced for a minimum period of time set by the legislation. Thirdly, the TM must be available in reasonably enough quantity for use by the public. Fourthly, if the TM is one that involves the use of drugs, it must pass toxicity, safety and efficiency tests. Fifthly, the TMK must be registered with the appropriate government office identified by the legislation.

The fourth element is institutional administration. The legislation will detail the institutional aspects of the national TM organ envisaged by the national TM policy as an organ that will be primarily responsible to implement the TM policy and legislation. It will prepare action plans to implement the legislation, determine human resource thereof, prepare rules for access to national TM database and informatory, produce TM

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120 Ong Chui Koon, *Intellectual Property Protection of Traditional Medicine and Treatments in Malaysia, in* PERSPECTIVES ON INTELLECTUAL PROPERTY: INTELLECTUAL PROPERTY ASPECTS OF ETHNOBIOLOGY 153, 172 (Michael Blakeney ed., 1999) (It has long been believed that 'A sui generis system appears to be the most appropriate scheme for the protection of traditional medicine and other treatments.').

121 If we were to take the APPTMI as a reference, these include the right to ownership on the production of the drug; right over the research, distribution, improvement or development of formulae on TM; IP rights on the TM and the texts on its production; right to permit (license) one's rights under the legislation and pass them to inheritors etc.

pharmacopeia, develop code of practice for TM, rules of registration for practitioners and their training and so on.

The fifth element is for the legislation to provide for the access and benefit sharing (ABS) of TM by way of implementing the CBD. The legislation can derive provisions from the Bonn Guidelines designed to implement the ABS concept in CBD. Prior informed consent, mutually agreed terms for the exploitation of the TMK and fair benefit sharing should be the basis of any agreement to be made between the custodians of the knowledge and any party that wants an access to develop such knowledge.

Finally, the legislation must regulate the production and distribution of TM. The national TM organ should develop standards for modes of manufacturing TM, regulate the toxicity levels and monitor the identity and purity of manufactured traditional medicines. Rules for the distribution of such drugs as well as the possibility for selling them on drug stores must also be detailed.

LEGISLATING ENERGY TRANSPORTATION CORRIDORS

Allan Ingelson[*]

ABSTRACT

This article will focus on two main questions. First, what legal issues can arise when a government creates legislation for a major energy transportation corridor? The Alberta Land Stewardship Act (ALSA) , Land Assembly Project Area Act (LAPAA) and Land Assembly Project Area Amendment Act 2011 will be examined along with the prior land-use planning experience in the United Kingdom and the American experience with energy transportation corridors. The second question to be considered is dies an energy transportation corridor promote sustainable development?

1. INTRODUCTION

This article will focus on two main questions. First, what legal issues can arise when a government creates legislation for a major energy transportation corridor? The *Alberta Land Stewardship Act* (ALSA),[1] *Land Assembly Project Area Act* (LAPAA) and *Land Assembly Project Area Amendment Act 2011*[2] will be examined along with the prior land-use planning experience in the United Kingdom and the American experience with energy transportation corridors. The second question to be considered is dies an energy transportation corridor promote sustainable development?

Canada's National Energy Board has reported that the country has "very large supplies of oil, natural gas, electricity and coal relative to the size of its domestic markets…and with the vast physical distances between supply sources and markets, the development of interconnecting pipeline and transmission infrastructure would not have been economically viable

* Executive Director, Canadian Institute of Resources Law and Associate Professor, Faculty of Law, University of Calgary.

1 Alberta Land Stewardship Act, S.A. 2009, c. A-26.8, (proclaimed October 1, 2009).

2 Land Assembly Project Area Act, S.A. 2009, c. L-2.5 (Can. Alta.) (assented to May 26, 2009) (hereinafter LAPAA); Land Assembly Project Area Amendment Act, S.A. 2011, c. 21 (Can. Alta.) (assented to Dec. 8, 2011) (hereinafter LAPAAA).

without the inclusion of export volumes to absorb a share of the costs."[3] In Alberta, the oil sands constitute "more than half of the world's oil resources that are easily accessible" with reserves of 170 billion barrels.[4] The Canadian Energy Resources Institute has estimated that the province should receive $184 billion in royalty revenues during the next 25 years.[5] Cambridge Energy Research Associates anticipate that production from the Alberta oil sands will account for 20-30% of the American oil supply by 2030.[6] In addition to Canadian and U.S. oil sands developers, companies originating in the Middle East, China, Japan, Korea, Malaysia, France and Norway are actively developing oil sands deposits. During 2011 Sinopec Corp. of China invested U.S. $4.65 billion in one oil sands project[7] and will invest $5.5 billion to construct a pipeline from Alberta to the west coast of Canada to transport the oil to markets in Asia.[8] Recently a consortium of three state controlled Indian companies, Oil & Natural Gas Corp., Oil India Ltd. and Indian Oil Corp. bid $5 billion for a interest in oil sands assets controlled by ConocoPhillips.[9]

Creation of an energy transportation corridor within Alberta responds to concerns expressed by oil and gas companies in North America

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3 *Canada's Energy Future: Reference Case and Scenarios to 2030* (Nov., 2007), NATIONAL ENERGY BOARD, http://www.neb-one.gc.ca/clf-nsi/rnrgynfmtn/nrgyrprt/nrgyftr/2007/nrgyftr2007ppndc-eng.pdf.

4 *Alberta's Crude Oil Proved Reserves* (Sept., 2012), GOV'T OF ALBERTA, DEPT. OF ENERGY, ECONOMICS AND MARKETS BRANCH, ALBERTA'S ENERGY MARKETS.

5 *Alberta's Oil Sands: Economic Benefits*, GOVERNMENT OF ALBERTA, http://www.oilsands.alberta.ca/economicinvestment.html.

6 *Oil Sands, Greenhouse Gases and US Oil Supply* (2010), CAMBRIDGE ENERGY RESEARCH ASSOCIATES, http://www.api.org/aboutoilgas/oilsands/upload/cera_oil_sands_ghgs_us_oil_supply.pdf (hereinafter the CERA Report).

7 Dina O'Meara, *Enbridge confirms Chinese Investment* (21 Jan., 2011), CALGARY HERALD, http://www2.canada.com/calgaryherald/news/calgarybusiness/story.html? id =5561846d-81eb-4303-a1f7-75fcf0b0704a.

8 A proposal by Enbridge Inc. to build a $5.5 billion dollar pipeline to export oil from the Alberta oil sands to the west coast of Canada and then via tankers to Asian markets is under review in the Canadian environmental impact assessment process. *See, e.g.*, David L. Junggren & Jason Fekete, *Enbridge Confident Pipeline Will Be Built* (10 Feb., 2012), CALGARY HERALD, http://www2.canada.com/calgaryherald/ news/calgarybusiness/story.html?id=9e2c8552-6d2d-4cf9-b172-13887c8d9747, at D1.

9 Jameson Berkow, *India finally makes a move on Canadian energy assets* (24 Sept., 2012), FINANCIAL POST, http://business.fianancialpost.com/2012/09/24/india-finally-makes-a-move-on-candian-en; Dan Healing, *Indian Firms Eye Oilsands Stake* (25 Sept., 2012), CALGARY HERALD, http://www2.canada.com/calgaryherald/news/calgarybusiness/story.html?id=11eaa3ec-4321-405b-ac0e-946f6bc77fd2, at C1 and C7.

about inadequate energy-supply infrastructure in the United States and Canada. Sean McMaster[10] in his address at the William A. Howard Memorial Lecture series discussed the deficiency in existing energy-supply infrastructure in North America. He alluded to the 2010 International Energy Agency Outlook that estimates "a cumulative investment of more than $6 trillion is needed in energy supply infrastructure in North America during the period 2010-2035…this investment will enable the replacement of oil and gas reserves and production facilities that are retired, as well as expansion of production and transport capacity to meet the growth in demand."[11] As far as global competitiveness regarding government regulation and efficiency in the legal framework, he referred to the 2010-2011 Global Competitiveness Index a report prepared by the World Economic Forum and notes that even though the U.S. and Canada are ranked highly (4th and 10th respectively) in global competitiveness, however the U.S. and Canadian scores are much lower in term of the "burden of government regulation" (49th and 41st respectively), and even lower in the evaluation of "efficiency of the legal framework in challenging regulation (35th and 18th respectively)."[12]

With regard to energy transportation infrastructure approvals[13] McMaster suggests that public and government opposition and difficulty in permitting/approval processes are restricting much needed modernization of energy infrastructure in North America…Regulatory and permitting costs and timelines are increasing significantly."[14] He notes that "much of the increased costs and expanding timelines are for non-value adding items such as increased legal and regulatory costs" and this is "hurting our global competitiveness."[15]

In Alberta, the "[m]ulti-function or multi-mode" corridor idea began in the 1970s with the establishment of local transportation and

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10 Q.C., Executive Vice-President Corporate and General Counsel, TransCanada Pipelines Ltd.

11 Sean McMaster, William A. Howard Memorial Lecture at the Faculty of Law, University of Calgary (Mar.10, 2011) at 11 (hereinafter Sean McMaster).

12 *Id.*

13 Examples of significant proposed oil and gas pipeline projects that are experiencing delays include the proposed trans-boundary Keystone pipeline from Canada into the United States and the proposed inter-provincial Enbridge Gateway pipeline designed to provide Canadian oil to markets in Asia such as China. See *Crude Bottlenecks Developing* (Sept., 2012), ALBERTA'S ENERGY MARKETS: OPPORTUNITIES AND CHALLENGES.

14 Sean McMaster, *supra* note 11, at 12.

15 Sean McMaster, *supra* note 11, at 13.

utility corridors (TUCs) near the major municipalities of Calgary and Edmonton. These urban TUC's incorporate pipelines, transmission lines, regional water and sewer lines, telecommunication lines as well as high standard ring roads. The proposed major energy transportation corridor is intended to cover a much larger area than urban TUCs. The energy transportation corridor in which oil, natural gas, carbon dioxide pipelines and carbon capture and storage facilities, electricity transmission lines, railways, roads and fiber optic cables and facilities can be constructed may not have uniform economic development along its entire length. The corridor may extend 1000 kilometers and be sub-divided into the following northern, heartland, inter-city and southern segments:

1. In the northernmost segment, future pipelines for carrying heavy oil, natural gas and diluents related to oil sands development could be incorporated into a single corridor. The northern section could incorporate an existing highway,[16] and include power transmission lines to transmit electricity generated by cogeneration plants used in oil sands development;[17]
2. The Heartland Segment can encompass a heavy industry area near the provincial capital city of Edmonton. The segment encompasses intensive heavy industry with multiple pipelines, transmission lines, highways and railroads running through it or in close proximity. Due to the fact that there is previous extensive development in this area, it is likely that there will be a number of corridors or a "network" of corridors in this segment which will incorporate existing infrastructure;
3. The Inter-City Segment of the corridor would run from Edmonton to Calgary and include a "high speed rail component and [a] critically needed additional high-voltage electricity transmission line to Calgary. Additionally, the corridor could incorporate pipelines that would transport oil from oil sands deposits for further refining in the U.S.A;

16 *See id.*, at 9 ("The announcement by the Alberta Government in 2007 of the $940 million twinning of highway #63 and the addition of the $350 million Horizon Pipeline (under construction) to the three pipelines already following this route, make a strong prima facie case for this being the path of the broader corridor.").

17 Bob Savage, Alta. Dept. of the Env't, Update on Alberta's Climate Change Strategy (11 Apr., 2012), Presentation at the Calgary Chamber of Commerce (hereinafter Bob Savage).

4. The Southern Segment of the corridor will facilitate the transportation of oil to refineries in the large U.S. market. This segment will be important to assist the United States in improving its energy security, as this leg of the corridor can provide the foundation for a large and efficient pipeline system connecting the immense oil sands reserves with major U.S. markets.

Alberta is a province in a federal state that has a national (federal) government and ten provincial governments. The *British North America Act* was adopted by the English Parliament to create the Dominion of Canada in 1867.[18] The Canadian Constitution provides for "heads of power" divided between the federal government and provincial governments. This distribution of jurisdiction is exclusive in that if the Constitution provides one level of government with jurisdiction over a matter, it excludes the other level from legislating on that subject matter. If one level of government passes an Act or regulation governing a matter over which the Constitution gives the other an exclusive power to legislate, a court may strike down either a provincial law or federal law as being ultra vires, beyond the jurisdiction of that specific government to pass the law in question. Non-renewable energy resources such as oil and gas and renewable energy resources are under the exclusive jurisdiction of provincial governments,[19] unless the energy development is located on federal lands (for example lands on which there are military bases and Indian Reserves,[20] or where the proposed energy infrastructure project impacts federal jurisdiction (one example is when water and fisheries resources are impacted.[21] Pursuant to Section 92(13) of the *Constitution Act, 1867*, the Alberta provincial government has jurisdiction over "property…" and "local works and undertakings…"[22] On the basis of the provincial heads of power discussed above, the provincial government created ALSA and LAPAA, to facilitate the creation of a major energy transportation corridor

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18 Constitution Act, 1867 (also known as British North America Act 1867), 30 & 31 Vict. c. 3 (U.K.), *as reprinted in* R.S.C. 1985 app. § 2 no. 5 (hereinafter Constitution Act).

19 *Id.* at s. 92A; (*see also* Natural Resource Transfer Agreement (NRTA)). The NRTA is found in the Constitution Act, 1930, 20 & 21 Geo. 4, c. 26 (U.K.), *reprinted in* R.S.C. 1985, app. s. 2, no. 26.

20 §91(24), the Constitution Act, *supra* note 18.

21 §91, the Constitution Act, *supra* note 18 (which provides that inter-provincial or international pipelines and power lines are under the exclusive jurisdiction of the federal government and the national energy regulator called the National Energy Board).

22 §92(10), the Constitution Act, *supra* note 18.

in the province. The corridor is directed toward transporting oil from oil sands mines and in-situ extraction sites, along with natural gas from a variety of areas in the province south to markets in the United States.

2. INADEQUATE LAND-USE PLANNING AND LACK OF CONSIDERATION OF CUMULATIVE EFFECTS

Substantial growth in oil sands development and production along with the associated increase in the provincial population has taxed existing housing, pipeline, road, rail and power line infrastructure in Alberta. The provincial government has been criticized for ineffective land use planning and the lack of an integrated energy policy that would promote increased development of renewable energy sources such as wind.[23] In 2006, Steven Kennett et al. noted that Alberta's regulatory system suffered from the "systemic problem" of incrementalism.[24] In Alberta, one land-use problem arises from several hundred thousand kilometers of oil and gas pipelines that criss-cross the province. A case by case approach under which pipelines have been conceived, routed and approved has resulted in an inefficient 'spaghetti' pattern with a substantial land surface footprint.[25] The authors note that "[i]ncrementalism takes the form of decision-making on a disposition-by-disposition or project-by-project basis, without clear direction regarding longer term, landscape-scale objectives."[26] These problems and their associated environmental impacts have concerned the provincial government. To that end, David McCalla and Caroline Cooper report that "[a]t the highest policy level, the Province has been grappling with issues arising from increased industrial activity and urbanization. The

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23 Michael M. Wenig, ASSESSING WHERE RENEWABLE ENERGY AND ENERGY EFFICIENCY STAND IN ALBERTA POLICY AND GOVERNMENT ORGANIZATION (2011); Michael M. Wenig & William A. Ross, *Making Progress Toward a Truly Integrated Energy Policy*, 31 LAWNOW 4 (2007); Andrew Nikiforuk, *Plan? What Plan? Alberta's Energy Future*, CANADIAN BUSINESS MAGAZINE (2006); Elona Malterre & Mark Lowey, *Alberta's New Energy Vision Faces Huge Challenges*, 16 ENVIROLINE 19-20 (2006); Michael M. Wenig, *Federal Policy and Alberta's Oil and Gas: The Challenge of Biodiversity Conservation*, G. BRUCE DOERN (ED.), HOW OTTAWA SPENDS 2004-2005: MANDATE CHANGE IN THE MARTIN ERA (2004).

24 S. Kennett et al., *Managing Alberta's Energy Futures at the Landscape Scale* (Nov., 2006), INST. FOR SUSTAINABLE ENERGY, ENVIRONMENT AND ECONOMY (ISEEE), http://www.iseee.ca/research/alberta-energy-futures-project/policy-reports/ (hereinafter the Kennett Report).

25 *Id.*

26 The Kennett Report, *supra* note 24.

government has been seeking to balance the need for long-term and coordinated planning, with local autonomy and private land rights."[27] Paula Simons also alludes to the deficiencies in land-use planning by the Government of Alberta:

> "[f]or years, Alberta has suffered from a dearth of long-term, big-picture land-use planning. As our province grows and changes, we need to plan the major infrastructure that will be the backbone of future development. When necessary, the government needs the power to assemble and set aside large blocks of land for major public projects—and it can't afford to get bogged down every time in protracted political fights, or held to ransom in endless and expensive negotiations."[28]

The absence of a comprehensive energy and environment policy along with the lack of strategic land use planning framework has meant that energy regulators have not been able to consider a coherent plan or policies to assist them when deciding whether or not to approve new energy projects. Jenette Poschwatta-Yearsley and Adam Zelmer note:

> "For years, commentators have called upon the government to adopt a comprehensive land-use planning framework. This call for a land-use framework was driven in part by the institutional fragmentation between government departments and the increasing cumulative effects of development on the landscape."[29]

Management of cumulative effects is another important issue to be addressed in light of the overall increase in GHG emissions from additional oil sands processing facilities in the Athabasca area, along with the water and land surface impacts from open pit mines. In 1997 cumulative effects was raised as an issue at a provincial energy regulatory hearing at which an

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27 D. McCalla & C. Cooper, *Real Estate Report, Alberta Bill 19 and Bill 50: Controversial? Certainly! Effective? Let's Wait and See* (17 Dec., 2009), MILLER THOMSON LLP, http://www.iseee.ca/research/alberta-energy-futures-project/policy-reports (hereinafter McCalla and Cooper).

28 Paula Simons, *Bill 19 Toxic to Rural Landowners; Proposed Land Grab Alienates Some Voters* (17 Mar., 2009), THE EDMONTON, http://www.udialberta.com/2009.%20%20March%2017.%20%20Edmonton%20Journal.%20%20Bill%2019%20toxic%20to%20rural%20landowners.pdf (hereinafter Paula Simons).

29 Jenette Poschwatta-Yearsley & Adam Zelmer, *The Alberta Land Stewardship Act: Certainty or Uncertainty?*, 106 RESOURCES (2009).

application for an oil sands mine was considered.[30] When reviewing whether or not to approve applications for drilling oil and gas wells, building pipelines and constructing oil sands mines the main oil and gas industry regulator in the province[31] the Energy Resources Conservation Board (ERCB), previously part of the Energy and Utilities Board has acknowledged that "cumulative effects" is a factor to consider, but in light of the complexity and difficulty of this issue has been reluctant to deal with the problem. One such environmental effect from oil sands facilities in the corridor is greenhouse gas (GHG) emissions. Numerous scientists have concluded that combustion of fossil fuels such as oil from the oil sands produces GHG emissions that that "absorb and re-emit infrared radiation" and effect the earth's climate prompting the U.N. Framework Convention on Climate Change.[32] Canada produces 2% of the global GHG emissions,[33] with oil sands production contributing 6.5% of the national GHG emissions in 2009, and 0.15% of global emissions.[34] The Canadian Federal Government has committed to reducing national emissions by 17% from 2005 levels, by 2020.[35] The Alberta government has adopted the *Climate Change and Emissions Management Act*[36] that requires major industrial facilities in the province to "reduce their per unit GHG output by 12%."[37] Even though oil sands operators have reduced the average per barrel GHG emissions by 29% during the period 1990 through 2009, a significant overall increase in oil production has resulted in increased total emissions.[38] One important element of the provincial government strategy to respond to

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30 EUB, Application by Syncrude for the Aurora Mine, EUB Decision 97-13, 24 October 1997, at 26-29. For a discussion of the management of cumulative effects see Steven Kennett, *Next Steps For Cumulative Effects Management in Alberta's Athabasca Oil Sands Region* (2006-2007), http://dspace.ucalgary.ca/bitstream/1880/47043/1/Resources96.pdf.

31 The Energy Resources Conservation Act, R.S.A. 2000, c. E-10, Oil and Gas Conservation Act, R.S.A. 2000, c. O-6, Oil Sands Conservation Act, R.S.A. 2000, c. O-7, and Pipeline Act, R.S.A. 2000, c. P-15 are the main statutes under which the oil and gas projects are considered for approval by the provincial government.

32 United Nations Framework Convention on Climate Change, 9 May, 1992, 1771 UNTS 107, 31 ILM 849.

33 Bob Savage, *supra* note 17.

34 Bob Savage, *supra* note 17.

35 Bob Savage, *supra* note 17.

36 Climate Change and Emissions Management Act, S.A. 2003, c. C-16.7 (hereinafter the Climate Change Act).

37 *Id.*

38 The Climate Change Act, *supra* note 36.

climate change is financial support for the development of carbon capture and storage (CCS) facilities[39] some of which I would anticipate will be located within the energy transportation corridor. The provincial government has invested $2 billion to develop 4 pilot test facilities in government/industry partnerships,[40] and the first CCS facility at an oil sands operation will open in 2015.[41]

In 2008, the Alberta Government released a "Land Use Framework" (LUF) policy that outlined the approach of the government "to manage public and private lands and natural resources to achieve Alberta's long-term economic, environmental and social goals".[42] ALSA was adopted the following year and its objectives are:

(a) to provide a means by which the Government can give direction…in identifying the objectives of the Province of Alberta…;
(b) to provide a means to plan for the future, recognizing the need to manage activity [for] future generations;
(c) to…enable sustainable development by taking account of…the cumulative effect of human endeavour.[43]

Subsections (b) and (c) suggest that what is contemplated under LUF and now ALSA is a land use planning process that is intended to promote sustainable development. The legislative objectives reflect an "ecosystem management approach" for land and resource management, "a set of normative principles and operational guidelines for managing human

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39 *Alberta surges ahead with climate action plan - $2 billion invested in carbon capture and storage; $2 billion in public transit* (8 Jul., 2008), *available at* http://www.newswire.ca/en/story/201375/alberta-surges-ahead-with-climate-change-action-plan.

40 *Id.*

41 Carbon capture and storage (CCS) facilities and pipelines to reduce greenhouse gas emissions are being evaluated and tested in Alberta; Canadian Environmental Assessment Agency, Screening Scoping Document for the proposed Shell Quest Carbon Capture and Storage Project, Shell Canada Limited, Aug. 4, 2010, CAE Registry Reference No. 10-01-55916; the first carbon capture and storage project for an oil sands facility was recently approved, is to be operational by 2015 and "is designed to capture more than one million tonnes per year of CO_2;" Dan Healing, *A Quest to cut emissions—Shell moving ahead on carbon capture*, CALGARY HERALD, Sept. 6, 2012, at D1.

42 LAND-USE FRAMEWORK (Dec., 2008), GOVERNMENT OF ALBERTA, http://www.landuse.alberta.ca/AboutLanduseFramework/LUFProgress/documents/LanduseFramework-FINAL-Dec3-2008.pdf, at 7.

43 The CERA Report, *supra* note 6.

activities in a way that permits them to coexist, over a specified management area, with the deemed to be worth protecting over the long term."[44] ALSA prevails over all other Alberta statutes including LAPAA and regulations. ALSA empowers the provincial government to establish regional plans and to amend those plans.[45] The Act enables the provincial government to create and approve regional plans that will bind the provincial government, local governments, decision makers, regulators, industry, and private individuals. ALSA creates a framework to develop regional land use plans. Each plan will set the context for all land use decision-making in a region and will have the force of law after the plan is approved by the government. After consulting with area residents including indigenous peoples and experts regarding environmental, social and economic issues in the region for longer than three years, on August 22, 2012, the provincial government approved the first regional plan in the province for the Lower Athabasca Regional Plan, the area in which the giant oil sands mines are located.[46] The proposed energy corridor is subject to ALSA. As LUF required the development of a strategy for transportation and utility corridors and regional plans must identify the general locations for TUC's, I anticipate a similar approach will be used by the provincial government for the larger energy transportation corridor.

3. Land Use And Expropriation

To appreciate the rationale for land planning and the related issue of government expropriation of private land that has prompted the Alberta Government to create LAPAA (a special act directed toward the acquisition of property for the major energy corridor), it is useful to consider the earlier land use planning experience in the United Kingdom (U.K.). Previous urban development in 20th century has prompted a need for effective resource allocation and land use planning to balance community and

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44 Steven A Kennett, *New Directions for Public Land Law*, 8 J ENV L & PRAC 1, At 12 (1998)

45 *Id.*, s. 4(1); See JENETTE POSCHWATTA-YEARSLEY & ADAM ZELMER, *The Alberta Land Stewardship Act: Certainty or Uncertainty?*, 106 RESOURCES 1-9 (2009), http://dspace.ucalgary.ca/bitstream/1880/47462/1/Resources106.pdf for discussion of the important elements of the statute.

46 *Lower Athabasca Regional Plan*, ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPMENT, GOVERNMENT OF ALBERTA, http://environment.alberta.ca/ 03422.html.

private interests.[47] W.O. Hart states that for effective land use planning it is necessary for a government to have the means to "acquire land compulsorily and thus control its use by virtue of ownership, and power to control the use of land without ownership."[48] Back in 1909, the U.K. Parliament conferred limited powers to government institutions in the *Housing, Town Planning &c., Act*, the first legislation which empowered local authorities to affect land use on sites with ongoing development and those which were likely to be used for development.[49] These limited powers were extended to the lands in the entire U.K under the *Town and Country Planning Acts* of 1932, 1943 and 1947.[50] Subject to review and approval by the Minister of Housing and Local Government, powers under these statutes have been used by the local authorities for decades to plan and designate sites for compulsory acquisition to carry out statutory functions, development projects and public purposes. In the U.K. the Minister may hold public hearings to deal with objections, however, once approved, the plan carries in it the requisite power to acquire and control the land use of the designated lands.[51] According to Hart, English planning laws carry excessive discretionary powers and lack an appropriate response to the problems of compensation and betterment.[52] That is why, some have argued in favour of appropriate judicial oversight of the planning process.[53] Hart also notes that planning control regulations might be perceived as state interference in personal freedom. However increasing pressure of population on land has necessitated and justified such measures to be introduced to share public responsibility in using the land.

As Canada is a former English colony, the law of expropriation in Alberta is defined under the common law and a provincial *Expropriation Act*[54] (EA). Under the common law there is broader protection than when the government expropriates land than under the EA. The long-standing

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47 CHARLES M. HARR (ED.), LAW AND LAND: ANGLO-AMERICAN PRACTICE, (1st ed. 1964) (hereinafter CHARLES M HARR).

48 W.O. Hart, *Control of the Use of Land in English Law*, CHARLES M HARR, *id.*, at 1 (hereinafter WO Hart).

49 *Id.* at 5.

50 WO Hart, *supra* note 48, at 6.

51 WO Hart, *supra* note 48, at 7.

52 WO Hart, *supra* note 48.

53 F.H.B. Layfield, *Planning Decisions and Appeals*, CHARLES M HARR, *id.*, at 105 (hereinafter FHB Layfield).

54 Expropriation Act, R.S.A. 2000, c. E-13 (Can. Alta.).

leading U.K. authority on expropriation followed in Canada is *Attorney-General v. De Keyser's Royal Hotel, Limited.*[55] In Dekeyser, the government commandeered a hotel to house military administrative staff during World War I. The hotel owner sued for compensation based on the government's temporary occupation of the building. The government argued that the hotel was required for national defence purposes under the Defence of the Realm Consolidation Act, 1914, and that under the Act there was no requirement to compensate the hotel owner. Lord Atkinson in the judgment of the House of Lords wrote:

> "Neither the public safety [n]or defence of the realm requires that the Crown should be relieved of a legal liability to pay for the property that it takes from its subjects. The recognized rule for the construction of statutes is that, unless the words of the statute clearly so demand, a statute is not to be construed so as to take away the property of a subject without compensation."[56]

Further Lord Parmoor stated:

> "Unless no other interpretation is possible, justice requires that statutes should not be construed to enable the land of a particular individual to be confiscated without payment."[57]

In the U.K., development plans have attracted or diminished development on land and in some cases had a serious impact on the value of the land, thus giving rise to the issues of redistribution of benefits and compensation.[58] The diminished property value concern has arisen in the context of the Alberta energy corridor. In Canada as in the U.K. where the parliament is sovereign and may or may not provide for compensation, "one merely examines the statute to see what provisions for compensation (if any) are contained in it."[59] In the case of provincial lands now, provincial expropriation acts are the key statutes on which compensation or the lack thereof is determined.

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55 Attorney-General v. De Keyser's Royal Hotel Ltd., [1920] A.C. 508 (H.L.) (U.K.) (hereinafter the Royal Hotel case).

56 *Id.,* at 542.

57 The Royal Hotel case, *supra* note 55, at 576.

58 Desmond Heap, English Development Plans For the Control of Land Use, CHARLES M HARR, *id.,* at 79 (hereinafter Desmond Heap).

59 R.E. Megarry, Compensation For the Compulsory Acquisition of Land In England, CHARLES M HARR, *id.,* at 212 (hereinafter RE Megarry).

A lawsuit initiated by an Alberta rancher who was opposed to the construction of an electricity transmission line through his land was decided by Canada's highest court in 1959. In *Calgary Power Ltd. v. Copithorne*[60] the appellant was a public utility company engaged in generating and transmitting electricity. Calgary Power had attempted to negotiate a right-of-way over the respondent rancher's private lands to construct a transmission line to the growing municipality of Calgary however the parties were unable to agree on the amount of compensation for the right-of-way. The Supreme Court of Canada affirmed the validity of an order of the provincial government minister to expropriate that portion of the land required for the power line and referred to the following legislative provisions:

> "63. (1) Any licensee for the purpose of the authorized undertaking may with the consent in writing of the Minister take and acquire by expropriation any lands other than Provincial lands or any interest therein which the Minister may deem necessary for the authorized undertaking.
> 72. (2) In any case in which a licensee desires or proposes to expropriate any land or any interest therein for the purpose of his undertaking, he shall first make application to the Minister for his permission or consent to expropriate the lands or interest therein specified in the application and the Minister may issue an order authorizing the licensee to expropriate such land or interest in land as the Minister by order may designate and may prescribe the terms and conditions of or to be applicable to any such interest in land."

After the Calgary Power Ltd. decision of Canada's highest court, the Honourable J.C. McRuer, then Chief Justice of the High Court of Ontario, was appointed in 1964 under the *Public Inquiries Act*[61] to enquire into personal freedoms, rights and liberties…for determining how far there may be unjustified encroachment on those "freedoms, rights and liberties" by the government and to recommend changes required "to safeguard the

60 Calgary Power Ltd. v. Copithorne [1959] SCR 24 (Alta.).
61 RSO 1960, c. 323.

fundamental and basic rights, liberties and freedoms of the individual." The McRuer Report[62] noted that

> "The decision to expropriate the property of an individual is an administrative decision of policy—a political decision in which the interests of the individual are sacrificed to the general interests of the community…[T]he power of expropriation is such an infringement on civil rights that jealous and vigilant attention should always be given to the question of upon whom it should be conferred."

As J.M. Evans et al. note "The federal government and most provinces have enacted legislation that reflect the recommendations in the McRuer Report that include:

(1) The expropriating authority must give notice to the owners of the land it proposes to expropriate.
(2) An owner is entitled, by objecting to a hearing.
(3) If an owner objects, the government must appoint an inquiry officer who is not a civil servant (and who is usually a lawyer in private practice).
(4) The inquiry officer must hold a hearing, at which the parties are the owners who have objected and the expropriating authority, and which is limited to the question whether the expropriation is "fair, sound and reasonably necessary" to achieve the objectives of the expropriating authority.
(5) The inquiry officer must report to a political authority.
(6) The political authority must approve or disapprove.[63]

For decades the *Expropriation Act* (EA)[64] has governed the process for land expropriation in Alberta.[65] Under the EA, initially, the expropriating authority must notify the landowner of the intention to expropriate pursuant to Section 8 of the EA. The landowner may object to the expropriation and request an inquiry under Section 10 of the EA. When the expropriating authority is not the Crown or a municipality, an inquiry is conducted by the Land Compensation Board, Sections 1(b)(i), 15(4) of

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62 *The McRuer Report*, No. 1, Vol. 3, at 991-992 and 1001-1002.

63 *Id.* at 42.

64 The Expropriation Act, RSA 2000, c. E-13 (hereinafter the Expropriation Act).

65 *See* Thompson v. Alberta (Minster of Env't), 2007 ABCA 411 (Can.); Swanson Estate v. Alberta (Minister of Transp. and Utils.), 2007 ABQB 393 (Can.); Thoreson v. Alberta (Minister of Alta. Infrastructure), 2006 ABCA 250 (Can.).

the Act. According to Sections 6(2), 18(4) of the EA the Board assesses whether the taking of the land, or the estate or interest in it, is fair, sound and reasonably necessary in the achievement of the objectives of the expropriating authority and if so it issues a certificate of approval. Pursuant to sections 29(1) and (3) of the EA, if the landowners and the expropriating authority cannot agree on the amount of compensation, the Court of Queen's Bench determines whether the expropriation is by the Crown, otherwise the Board is responsible.

Section 2 of the EA provides:

> (1) This Act applies to any expropriation authorized by the law of Alberta and prevails over any contrary provisions that may be found in the law, except the statutes or parts of statutes enumerated in the Schedule.
>
> (2) This Act binds the Crown.[66]

The terms "expropriation," "land" and "owner" are defined in Sections 1(g), (h) and (k):

> "(g) "expropriation" means the taking of land without the consent of the owner by an expropriating authority in the exercise of its statutory powers;
>
> (h) "land" means land as defined in the authorizing Act and if not so defined, means any estate or interest in land:
>
> (k) "owner" means
>
> (i) a person registered in the land titles office as the owner of an estate in fee simple in land,
>
> (ii) a person who is shown by the records of the land titles office as having a particular estate or an interest in or on land,
>
> (iii) any other person who is in possession or occupation of the land,
>
> (iv) any other person who is known by the expropriating authority to have an interest in the land, or
>
> (v) in the case of Crown land, a person shown on the records of the department administering the land as having an estate or interest in the land;"

In light of the existence of the EA, why has the Alberta Government created a special statute for the acquisition of property rights for private

66 § 2, *supra* note 64.

lands to be included in the corridor designated by the provincial government? To answer this question, it is helpful to review a 1977 decision of Alberta highest court. In *Heppner v. Alberta*,[67] the Alberta Supreme Court Appellate Division considered the appeal of a disgruntled landowner in response to a proposed pipeline and restricted development area created by the Alberta Government that incorporated the appellant's land. The restricted development area had been designated by Lieutenant Governor in Council in the "public interest" for the purpose of protecting the environment from negative impacts of mineral resource developments, and for maintaining watersheds and the environment of the area in a natural state pursuant to the *Department of the Environment Act*, S.A. 1971, c. 24.

In response to an application for approval of a proposed pipeline by an oil company called Dome Petroleum, the government approved the construction of the pipeline in Restricted Development Areas maintaining that it was in the best interest of the public that the restricted area be used as a corridor for transportation, utilities and pipelines facilities. The landowner opposed to the pipeline challenged the government's decision to allow the transportation and utility corridor and sought an order:

> "Declaring that Order-in-Council 1062/76 filed under *The Regulations Act* as Alberta Regulation 262/76 is invalid and for an Order directing The Registrar of the North Alberta Land regulation District to discharge the registration of the said Order-in-Council, which was filed as Instrument No. 772011840 on January 20, 1977, from the title to the Applicant's land."

The Chambers judge dismissed the application maintaining that the Order-In- Council was within the purpose of the Act. On appeal the Appellate Division of Supreme Court declared the regulation to be invalid and allowed the appeal. In allowing the landowner's appeal, the Court reiterated the presumption that subordinate legislation is prime facie valid unless there is clear evidence to the contrary. In light of the possibility of pipeline leaks and the potential for pipeline blowouts, clearly the corridor was not being created to protect the environment. Moreover, when considering impugned legislation the court took into account relevant extrinsic evidence such as the statement of intention, and the overall

67 Heppner v. Alberta, [1977] A.J. No. 523, 80 D.L.R. 3d 112 (Can.).

purpose of the legislation. Based on the evidence presented, the court ruled that creating a transportation and utility corridor within a restricted area contradicted the purpose for which the area was designated (environmental protection). At para 43 of the judgement the Alberta Supreme Court concluded that:

> "the primary purpose and the motivating force behind the promulgation of the Order-in-Council being impugned in this appeal was the creation of "a transportation and utility corridor," a purpose not authorized by the Act, and therefore the Order-in-Council and the regulations purported to be issued there under are invalid. The fact that in accomplishing this invalid purpose, a peripheral purpose falling within the strict terms of the Act may be accommodated does not render valid what would otherwise be invalid subordinate legislation."

The highest court in Alberta clearly noted the government's disregard for the objective of the legislation (environmental protection of a natural area) and the absence of a specific legislative framework to establish a pipeline corridor. In light of the decision in *Heppner*, it is understandable why the Alberta Government would like to avoid the embarrassment of similar outcome in another corridor dispute with a private landowner. The government has specifically addressed the acquisition and use of lands for the energy corridor in LAPAA to avoid a repeat of what happened in *Heppner*.

Thirty years later, vocal landowner opposition arose to the proposed construction of 500 KV electricity transmission lines across private lands to supply electricity to the growing population in southern Alberta. In response to objections voiced by members of the public, a hearing was conducted by the provincial electricity administrative board called the Alberta Energy and Utilities Board (AEUB), now the Alberta Energy and Utilities Commission, to consider the merits of the concerns and decide whether or not to approve the construction of the transmission line. Contrary to the impartial role expected of administrative boards in the province under the rules of natural justice, in response to threats from disgruntled landowners that arose at the hearings, the AEUB hired undercover private investigators to observe affected landowners and interveners. After the Board's action was disclosed publically, inquiries concluded that the conduct of Board was grossly inappropriate and it was

compelled to vacate its decision regarding the transmission line.[68] A new board called the Alberta Utilities Commission (AUC) was created on January 1, 2008, as an independent quasi-judicial agency of the Alberta Government, to provide for a fair and responsible delivery of provincial utility services in the public interest.

The AUC regulates Alberta's electric, gas, and water utility system and exercises jurisdiction over the location of major gas and electricity transmission facilities and electricity power plants in the province and has the responsibility to ensure the safety of natural gas pipelines. It ensures that the facilities for utilities are built, operated, operated, and decommissioned in an "efficient and environmentally responsible way".[69] The AUC has a duty to ensure that electric transmission lines, natural gas pipelines, fibre optic lines and other telecommunication facilities and water pipelines approved by it will adhere to the corridor concept and that proper authorization for the use of the corridor lands has been obtained from the key agency administering the corridor.[70]

In light of the *Heppner* dispute and the 2007 AEUB transmission line debacle, notwithstanding the effectiveness of EA in addressing land expropriates for decades, the government has created LAPAA to specifically address property rights issues that can arise from creating an energy transportation corridor. It would appear that the Act is directed toward minimizing legal challenges that can arise in disputes such as *Heppner* and avoiding the types of project delays in the development of energy transportation infrastructure alluded to by Sean McMaster.

4. LAPAA

68 Alice Woolley, *Enemies of the State?: The Alberta Energy and Utilities Board, Landowners, Spies, a 500 kV Transmission Line and Why Procedure Matters*, J. ENERGY NAT. RESOURCES L. 234 (2008).

69 THE ALTA. UTILS. COMM'N, http://www.auc.ab.ca.

70 For details on AUC regulatory documents and legislation for energy utilities infrastructure see Rule 007—"Rules Respecting Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations," Rule 020—"Rules Respecting Gas Utility Pipelines," Rule 011—"Rate Application Process for Water Utilities," *Electric Utilities Act* and its regulations, *Gas Utilities Act* and its regulations, *Hydro and Electric Energy Act* and its regulations, *Water, Gas, and Electric Companies Act*, *Public Utilities Act* and its regulations, *Pipeline Act* and its regulations.

LAPAA and the *Land Assembly Project Area Amendment Act*,[71] provide the framework for the government acquiring private land as part of a strategic land planning process for the major energy transportation corridor. The legislation will enable the "government to designate private and public lands for major infrastructure projects and to regulate future development within an approved project area, with the understanding that the land will ultimately be purchased by the Province."[72] One reason for creating LAPAA, cited by the Hon. Jack Hayden, Alberta Minister of Infrastructure, is to address the lack of a statutory basis specifically to address the acquisition of lands for the energy corridor and to respond to previous criticism of the provincial government about the lack of long-term land use planning and the importance of effective energy transportation infrastructure. While introducing LAPAA to the provincial legislature, the Minister of Infrastructure stated that

> "[t]he success of the Transportation and Utility Corridor program, which includes the Edmonton and Calgary ring roads, is due in part to the government's foresight 35 years ago to start identifying and setting aside land for these important projects….This new legislation will facilitate similar types of projects that often require years of preparation, while ensuring affected Albertans are treated fairly and have an opportunity to provide input."[73]

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71 LAPAA, *supra* note 2; LAPAAA, *supra* note 2.

72 *Govt. Of Alberta News Release* (1 Nov., 2011), http://Alberta.ca/home/News Frame.cfm?ReleaseID/acn/200903/25396C868C74A-F6A2-A456-7AAD5ED676F651F9.html.

73 *News Release, Government of Alberta, New Legislation Enhances Process to Assemble Land for Large-Scale Infrastructure Projects*, (Mar. 2, 2009), http://alberta.ca/ACN/200903/25396C868C74A-F6A2-A45E-7AAD5ED676F651F9.html.

Furthermore,

> "the legislation will improve the process for government to designate and assemble large tracts of land for major infrastructure projects such as transportation utility corridors. The legislative framework enhances transparency and accountability when dealing with numerous landowners for large-scale land acquisitions over the long term."[74]

One observer Fergus Hodgsen has suggested another reason that the government created LAPAA; to reduce landowner opposition to major energy infrastructure projects and reduce delays:

> "when attempting to forward plans for large, long-term projects that did not fit the profile conceived within past legislation, the province ran into a lot of landowner resistance and high court costs. By increasing transparency, setting aside areas well in advance and giving landowners a chair at the planning table, the hope is that relevant projects will now be implemented with more ease and better tailored to the needs of the constituency."[75]

Another commentator has noted the increased number of options for the government to acquire private land to be used for major public projects:

> "The purpose of the act is to make it easier for the province to assemble big blocks of land, over time, for major public projects such as ring roads, high-speed rail lines, or power lines—or to protect waterways like rivers and lakes. The proposed law effectively allows the province to earmark land it might—or might not—need in the future, serving advance notice of its plans. By the provisions of the bill, the province wouldn't have to expropriate that land right away. It could simply forbid the landowner to make major changes to the property that might impede the province's

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74 ALTA. LEGIS. ASSEMBLY, HANSARD, 27TH LEG., 2ND SESS., ISSUE 11 (Mar. 2, 2009) (statement of Ken Kowalski).

75 F. Hodgson, *Land Regulation, Expropriation and Appropriation Laws in Alberta: An Analysis and Review of Bills 19 and 36: The Land Assembly Project Area Act and the Alberta Land Stewardship Act* (Oct., 2009), FRONTIER CTR. FOR PUB. POLICY, http://www.fcpp.org/images/publications/72.%20Expropriation%20and %20Appropriation%20Laws%20in%20Alberta.pdf.

> future development plans. For example, if the province wanted to reserve a parcel for a future highway, pipeline, transmission corridor or park, it could prevent land- owners from subdividing their property as a residential development, or from building giant hog barns."[76]

Certainly LAPAA will allow the government to avoid some of the legal challenges previously discussed when the Crown has attempted to negotiate compensation for access across private land for energy infrastructure projects and such efforts have been unsuccessful. The powers granted under the LAPAA appear to be similar to those granted under the *Government Organization Act* in its Restricted Development Areas section.[77] As discussed in the *Heppner* dispute that section was initially designed for environmental protection purposes and was later "amended specifically to be used for the Edmonton and Calgary Transportation Utility Corridors."[78] Notwithstanding its powers under the *Government Organization Act*, the government concluded that "a new Act should be developed specifically for future large-scale and long-term land acquisition programs for transportation utility corridors."[79]

In LAPAA "public project" is defined as "a project related to the transportation of people or goods, which may also include as part of that project a corridor of land for pipelines, or other conduits, poles, towers, wires, cables, including fibre optic cables, conductors or other devices, including any ancillary structures."[80] In addition, a "public project" can be "a project related to the conservation or management of water."[81]

As noted above, the government is required to take several steps before establishing a Land Assembly Project. Section 3(1) of the Act states:

> "The Lieutenant Governor in Council may not designate an area of land as a Project Area with respect to a public unless the Minister
>
> (a) has prepared a plan, in accordance with the regulations, of the proposed project,

76 Paula Simons, *supra* note 28.
77 RSA 2000, G-10.
78 *Id.*
79 *Id.*
80 § 2(2)(a), LAPAA, *supra* note 2.
81 § 2(b), LAPAA, *supra* note 2.

(b) has made the plan of the proposed project available to the public in accordance with the regulations,

(c) has provided the registered owners of land within the proposed Project Area with notice of the proposed project in accordance with the regulations, and

(d) has consulted, in accordance with the regulations, with the registered owners of land within the proposed Project Area."[82]

Once the plan has been made public, the government has a two-year time limit to designate the area as a Land Assembly Project Area.[83] This time limit will reduce the uncertainty for landowners that may or may not be affected by a project.

In LAPAA, the government has outlined a seven-step process that it will follow to create an energy corridor.[84] First, the government "identifies a potential need for a large-scale infrastructure project."[85] Next, the province creates and publicizes a plan, and identifies the land that might be affected.[86] Thirdly, "landowners within a proposed project area are notified and have an opportunity to comment on the plan…"[87] After the consultation period, the provincial government will consider a number of factors, including comments from landowners, and evaluate whether or not to create the proposed project area.[88] The Alberta Government cabinet will then make a decision regarding the designation of a project area.[89] Following approval of a project area, "a copy of the plan is filed with Chief Administrative Officers of any affected municipalities.

In Alberta a municipality is "a corporation, a legal device that allows residents of a specific geographic area to provide services that are of common interest."[90] The responsibilities of municipalities in terms of infrastructure include roads, public transportation systems, in some cases electricity, natural gas, and telephone lines, water supply systems, land use

82 § 3(1), LAPAA, *supra* note 2.
83 § 3(2), LAPAA, *supra* note 2.
84 LAPAA, *supra* note 2.
85 LAPAA, *supra* note 2.
86 LAPAA, *supra* note 2.
87 LAPAA, *supra* note 2.
88 LAPAA, *supra* note 2.
89 LAPAA, *supra* note 2.
90 C.R. TINDAL AND SN TINDAL, LOCAL GOVERNMENT IN CANADA 2 (2004).

planning and regulation.[91] A municipality is a local government a "democratic institution" that is "governed" by an elected council. Local residents can raise and express their concerns to the local municipal council.[92] Canadian courts have acknowledged the role of councils in "reflecting the conscience of the community."[93] Municipal governments are created under the *Municipal Government Act* (MGA),[94] and derive their powers from the Act. A municipality is defined in Section 1(1)(s) of the MGA as a city, town, village, summer village, municipal district or specialized municipality, or if the context requires, as its geographical area. The role of municipalities is outlined in Section 3 of the MGA as follows:

(a) to provide good government;
(b) to provide services, facilities and other things that, in the opinion of council; are necessary or desirable for all or part of the municipality; and
(c) To develop and maintain safe and viable communities.

Municipal governments must exercise their powers in a manner that is consistent with the above three purposes. They can create bylaws on matters including transportation and transit systems, public utilities,[95] safety, health and welfare of local residents including protection of property, business and business activities, and services provided by or on behalf of the municipal government. Section 9(b) of the MGA provides that bylaw-making powers are to be construed broadly to improve the ability of municipal governments "to respond to present and future issues in their municipalities." The Supreme Court of Canada in *114957 Canada Ltee (Spray-Tech, Societe d'arrosage) v. Hudson (Ville)*[96] and the Ontario Court of Appeal in *Croplife Canada v. Toronto (City)*[97] have acknowledged the role of municipal governments in environmental protection through the creation of bylaws for improved public health and safety.

Part 17 of the MGA provides an important power to municipal governments to control and regulate the development and use of all private

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91 A. Sancton, *Provincial and Local Public Administration*, C DUNN (ED.), THE HANDBOOK OF CANADIAN PUBLIC ADMINISTRATION 254 (2002) (hereinafter A Sancton).

92 *Id.*, at 3.

93 Smith v. White City (Village) (1989), 81 Sask. R. 79 (Q.B.).

94 Municipal Government Act, R.S.A. 2000, c. M-26.

95 §7, *Id.*

96 [2001] 2 S.C.R. 241 at 249.

97 (2005), 254 D.L.R. (4th) 40 (Ont. C.A.); leave to appeal refused 2005 Carswell Ont. 6587 (S.C.C.).

and municipal land within their respective boundaries. However as the MGA does not bind the Alberta Crown, municipal planning documents and bylaws do not apply to provincial Crown lands as long as those lands are utilized by the Alberta Government. Section 2 of LAPAA allows the government to establish a "Land Assembly Project Area" in situations where the government finds "one or more areas of land are required for a public project and land is intended to be acquired by the Crown over a period of time."[98] David McCalla and Caroline Cooper note that "[d]esignation [as a project area] is, in effect, 'super zoning' overriding municipal bylaws and pre-existing land designation."[99]After the government has designated a Land Assembly Project Area, it must notify municipalities within, or partly within, the area by providing them "with a certified copy of the project area order and a certified copy of the associated regulation."[100]

Land ownership in Alberta is administered under the *Land Titles Act*.[101]The government must also provide the Registrar of Land Titles with the same materials, and the Registrar is required to "endorse a memorandum of the notice on each certificate of title pertaining to land within the Project Area."[102] As far as private landowners are concerned each one will be informed by the government that a notice has been filed on their Certificate of Title that indicates their land is part of the project area."[103] In addition, the government must provide estate or interest-holders in land within a project area with similar information.[104] Finally, in the seventh step, the province will initiate the process of "acquiring and assembling the land necessary for the project."[105]

In light of potential overlap or conflicts with existing environmental protection legislation and regulations,[106] the *Surface Rights Act*, *Expropriation Act*, and other statutes, Section 4(1) of LAPAA grants the

98 § 2(1), LAPAA, *supra* note 2.
99 McCalla and Cooper, *supra* note 27.
100 § 5(1)(a), LAPAA, *supra* note 2.
101 RSA 2000, c. L-4.
102 § 5(1)(b), LAPAA, *supra* note 2.
103 LAPAA, *supra* note 2.
104 § 5(1)(c), LAPAA, *supra* note 2.
105 LAPAA, *supra* note 2.
106 Environmental Protection and Enhancement Act, RSA 2000, c. E-12. (Can. Alta.) (hereinafter the EPAA).

provincial cabinet with the power to establish regulations for designated Land Assembly Project Areas.[107] The subsection states in part:

> "Notwithstanding any other Act or regulation, where the Lieutenant Governor in Council designates an area of land as a Project Area, [it] may, with respect to the Project Area, make regulations
>
> (a) respecting the control, restriction, prohibition or approval of any kind of use, development or occupation of land in the Project Area;
>
> (b) authorizing the Minister to consent to or approve any particular kind of use, development or occupation of land in the Project Area or to exempt any particular kind of use, development or occupation of land from the operation of any provision in the regulations made pursuant to clause (a);
>
> (c) respecting the removal of any buildings, improvements, materials or animals from the Project Area, and respecting the payment of compensation by the Crown for any loss resulting from the removal;
>
> (d) respecting the control, restriction or prohibition of the exercise of any power referred to in the regulations by a Minister of the Crown, government official or government agency;
>
> (e) respecting the control, restriction, prohibition or approval of the dumping, deposit or emission within the Project Area of any substance referred to in the regulations;
>
> (f) making any or all of the provisions of the *Surface Rights Act* inapplicable to any Crown land in the Project Area;
>
> (g) respecting the prohibition, with respect to any Crown land in the Project Area, of any expropriation to which the *Expropriation Act* applies;
>
> (h) respecting any other matter or thing the Lieutenant Governor considers necessary or incidental to the use,

107 § 4, LAPAA, *supra* note 2..

> development or occupation of land in the Project Area."[108]

Additional requirements specify steps and measures the government must take when a "project area order" or regulation is "amended or repealed."[109]

Under the *Surface Rights Act* (SRA),[110] compensation must be paid for surface access and use of private land in Alberta.[111] If a landowner and a mineral developer fail to negotiate surface access the developer can apply for a right of entry order under Section 12 of the SRA and the Surface Rights Board may at a hearing determine the amount of compensation payable to the landowner for surface access and use, pursuant to Section 25 of the Act. The SRA "applies to all land in Alberta except land within the geographic area of a Metis Settlement," that is covered under a separate Act in light of the special constitutional status of the aboriginal peoples.[112] In regard to Section 4(1)(f) of LAPAA, the SRA in Section 12(1) provides that:

> "No operator has a right of entry in respect of the surface of any land (c) for or incidental to the construction, operation or removal of a pipeline, or (d)…power transmission line…or (e)…telephone line, until the operator has obtained consent of the owner and the occupant of the surface of the land…."[113]

To expedite major energy infrastructure projects in a designated corridor, if the government wants to avoid the normal provisions and procedures that apply under the SRA, Section 4(1)(f) provides the government with the power to do so. As far as Section 4(1)(g) of LAPAA is concerned it would appear that an approach similar to one historically employed under the EA is contemplated. It would appear that LAPAA doesn't purport to confer any authority to the provincial government that it

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108 § 4(1), LAPAA, *supra* note 2..

109 §§ 5(2)-(3), LAPAA, *supra* note 2.

110 RSA 2000, c. S-24.

111 §§19 to 27, *id.*

112 There is a separate statute modeled after the SRA that addresses the special constitutional rights of Metis residents, one of Canada's aboriginal peoples.

113 §13.2(1) also deals with the right of entry to facilitate the subsurface injection of captured carbon dioxide.

does not already have under the Canadian constitution. The Government has stated that the LAPAA "isn't about expropriation."[114]

The authority to create regulations under LAPAA is central to the statute. As noted earlier, the regulations will contain the specific notice and consultation requirements for the long-term land assembly. McCalla and Cooper have noted that "the rules applicable to each designation will be specific to each designated area, and are not spelled out in the Act. Rather, they will be set forth in regulations approved by Cabinet at the time of the designation. The regulations may operate as an effective 'freeze' on the lands within the designated area."[115]

Flexibility with regard to making regulations is important because different segments of the corridor may be compatible with certain uses while other sections might be incompatible with those same uses. A use should not be banned along the entire corridor when in reality, that use is only incompatible with one segment. It would appear that flexibility is also important to the government to increase efficiency and prevent undue costs and expenses. As the government suggests, "[i]t doesn't make sense to allow the construction of a 10-storey building if it will be located in the path of a future highway, transportation utility corridor, or water reservoir."[116]

From the standpoint of avoiding social conflict and preserving ranching, farming and forestry as important existing industries for future generations, the government indicates that "[e]xisting uses within a project area will be allowed to continue. For example, farmers can continue to use their land for agricultural purposes until the land is eventually required for the project."[117] Additionally, landowners will be able to erect new buildings if they receive ministerial approval.[118] From this perspective, a project area designation is properly viewed as a tool which would allow the government to allow existing uses compatible with plans for a future utility corridor while at the same time ensuring that time and capital are not wasted on projects and improvements incompatible with the proposed corridor.

4.1 Energy Corridor Issues that have arisen in the United States

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114 *Id.*
115 McCalla & Cooper, *supra* note 27.
116 McCalla & Cooper, *supra* note 27, at 4.
117 McCalla & Cooper, *supra* note 27.
118 McCalla & Cooper, *supra* note 27, at 2.

Meaningful consultation with private landowners and stakeholders that may be affected by an energy corridor can reduce social conflict, one objective of sustainable development. The benefits of notifying residents and other stakeholders should be apparent. Arguably fairness requires that landowners and other parties whose livelihoods may be affected by the creation of an energy corridor receive formal notification of a proposed corridor from the government. Additionally, consultation with landowners will increase process transparency and will allow landowners to voice concerns. As discussed earlier, the idea is that landowner concerns and opposition will be dealt with up-front in the planning stages of the corridor rather than through litigation at a more advanced stage after infrastructure projects have been initiated. Problems have arisen in the United States of America (U.S.A) and in particular the State of California, when there was a lack of meaningful consultation with residents and problems with coordination amongst different levels of government and agencies.

The U.S.A. is a federal state like Canada with both the federal and state governments legislating energy corridors. The *Federal Land Policy and Management Act* (FLPMA) of 1976, makes specific provisions in relation to energy infrastructures and encouraging confinement of rights-of-way into energy and utility corridors to improve efficiency and minimize environmental impacts.[119] Eleanor R. Schwartz maintains that the FLPMA was created to address weaknesses in the management of federal public lands and develop a comprehensive land use planning process.[120]In light of the need for more effective energy infrastructure planning, the U.S. *Energy Policy Act* of 2005 (EPA)[121] provides the federal Secretaries of Agriculture, Commerce, Defence, Energy and Interior with the power to designate "under their respective authorities, "energy corridors" on federal lands,"[122] that can incorporate oil, gas and hydrogen pipelines, electric transmission and distribution lines. There are two provisions in the Act which specifically allow for such corridor designations.

119 McCalla & Cooper, *supra* note 27.

120 Eleanor R. Schwartz, *A Capsule Examination of the Legislative History of the Federal Land Policy and Management Act of 1976*, 21 ARIZ. L. REV. 286 (1979).

121 2005, Pub. L. No. 109-58, S 368 (Aug. 8, 2005) 119 Stat. 594).

122 *Notice of Proposed Action: Adoption of Regulations to Establish a Process to Designate Transmission Corridor Zones* (11 Sept., 2007), CAL. ENERGY COMM'N, http://www.energy.ca.gov/sb1059/notices/2007-09-20_NOTICE.PDF (hereinafter Notice of Proposed Action).

Section 368 of the EPA which amends Title 42 of the US code, deals with energy corridors for variety of energy related facilities on federal lands. Whereas Section 1221, which amends Title 16 of the US code, provides for designation of electric transmission facilities which can be designated on any type of land within united states.[123] It is anticipated that the corridor provisions are designed to provide for a coordinated and consistent planning, to bridge any gaps in related federal land management agencies and to simplify corridor designation procedures. To achieve that end, congress stressed the need for coordination between the relevant agencies and directed them to enter into a memorandum of understanding encompassing plan to achieve consistency and coordination in land use planning, and a joint environmental statement as the ground for the related federal approvals.[124] Section 368 also specifies a statutory 2 year and a 4 year limit from its enactment for corridor designation in eleven western states and for the rest of the country respectively. Moreover, it requires preparation of an environmental impact statement prior to designating such corridors. It also imposes further and ongoing responsibility on relevant agencies to keep up with future demands and designate needed corridors from time to time.[125]

Weakness in the consultation and government department or agency coordination experience for energy corridors in the United States and in particular the state of California provides insight that can be useful in Alberta and in other jurisdictions that contemplate the creation of energy corridors. To improve inter-agency cooperation[126] under Section 368(a) of the EPA[127] the Federal Government requires consultation amongst government departments, industry stakeholders and "other interested persons" regarding the creation of energy corridors on federal lands and established a time limit as follows:

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123 Debbie Swanstrom & Meredith M. Jolivert, *DOE Transmission Corridor Designations and FERC Backstop Siting Authority: Has the Energy Policy Act of 2005 Succeeded in Stimulating the Development of New Transmission Facilities*, ENERGY L.J. 415 (2009) (hereinafter Swanstrom and Jolivert).

124 *Id.*

125 Swanstrom and Jolivert, *supra* note 123.

126 James Bartridge, *West-Wide Energy Corridor Programmatic Environmental Impact Statement* (8-9 Feb., 2006), CALIFORNIA ENERGY COMMISSION, http://www.energy.ca.gov/corridor/documents/2006-02-08+09_workshop/2006-02-08_BARTRIDGE.PDF.

127 Energy Policy Act of 2005, Pub. L. No. 105-98, 42 U.S.C. § 19 (2005).

> "Not later than two years after enactment, Departments of Agriculture, Commerce, Defense, Energy and Interior, in consultation with FERC [the Federal Energy Regulatory Commission], States, tribal [indigenous residents] or local units of government as appropriate, affected utility industries, and other interested persons, shall consult with each other and shall jointly designate corridors for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities on federal land…perform environmental reviews for such designations and incorporate the designated corridors into the relevant agency land use and resource management plans."

The State of California has been much more vigorous in promoting increased development of renewable energy resources such as wind, solar and geothermal creating a more sustainable energy mix than in Alberta.[128] One of the obstacles to the increased use of wind energy in California and Alberta is the limited number of transmission lines from wind turbines that tie into the electricity grid. The State of California has developed regulations to administer the process for designating transmission corridor zones.[129] According to the California Energy Commission (CEC), the estimated benefits that may accrue from the regulations to establishing the process for "Designating Transmission Corridor Zones"[130] include:

- Support policy/environmental goals to access renewable power generation
- Lower transmission system congestion costs and improved system reliability benefit the state's ratepayers.
- Accelerated transmissions permit process for utilities
- Better opportunities for public/stakeholder participation[131]

One question raised at a Corridor and Strategic Transmission Workshop in California on was: "Did the proposed corridor identification

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128 The California Shade Control Act, 1978 is one example of a strong piece of legislation designed to facilitate access to solar power and increased use of renewable energy in the state.

129 Notice of Proposed Action, *supra* note 122 at 64.

130 *Economic and Fiscal Impact Statement (STD 399, Rev. 2-98)* (1998), STATE OF CAL., DEP'T OF FIN.

131 *Id.*, at 2.

process described in a background paper meet stakeholder, state and local agency, and public concerns and needs for state-led transmission planning?"[132] In response to the question the Regional Council of Rural Counties and the League of California Cities indicated that they fully supported the California government "undertaking the assessment of transmission corridor needs to identify where future transmission expansion projects are anticipated," however the proposed state-led corridor identification process did "not meet city, county and the public's concerns and needs relative to the establishment of transmission corridors."[133]

4.1.1 Lack of Notification to Property Owners

Concern was expressed by local governments about inadequate property owner notification about the proposed transmission corridor bill. They note that the Bill "would tie up the future uses of land without adequate property owner notification."[134] Local governments cite a State 2004 IEPR Update that indicated " the success of a state-wide transmission planning effort will depend to a significant extent on our ability to engage the active participation of…of the residents who live in areas where these infrastructure investments are being considered."[135] Local governments also questioned how there could be "active participation" by landowners impacted by a corridor without notification and indicated that they "support notification to each property owner within a proposed corridor."[136]

4.1.2 Lack of a Collaborative Approach by the State Energy Regulator with Local Governments

Local or municipal governments have reported that it has been difficult to reconcile the purported desire of the State California Energy Commission for a collaborative approach to transmission corridor planning with the top-down, heavy-handed approach in the bill," and it would "pre-

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132 *2005 Energy Report: Comments on Corridor and Strategic Transmission Planning Workshop* (20 May, 2005), LEAGUE OF CAL. CITIES, http://www.counties.org/images/public/Advocacy/ag_natres/corridor_letter.pdf (hereinafter League of Cities Letter).

133 *Id.*, at 1.

134 League of Cities Letter, *supra* note 132, at 2.

135 League of Cities Letter, *supra* note 132.

136 League of Cities Letter, *supra* note 132.

empt local land use authority by requiring local governments to amend their general plans to be consistent with the CEC's designation of transmission corridor zones."[137] A similar concern may be raised in Alberta by municipal governments about the energy corridor. The local governments in California also raised the question of what were "compatible local land uses or local permitted projects within the transmission corridor zones."[138] The same issue can arise in Alberta and other jurisdictions that will legislate energy corridors in the future.

4.1.3 Landowner Lawsuits

Local governments in California have expressed concerns about a designated corridor restricting the use and sale of "large swaths of land for an undetermined length of time without landowner compensation,"[139] and about the potential for disgruntled landowners initiating regulatory takings lawsuits against local governments, and noted that even though "such actions may not prevail, local government would be forced to absorb the costs of defending against such actions."[140] Notwithstanding the differences in U.S. and Canadian takings law,[141] the possibility of expropriation or takings actions by disgruntled landowners in Alberta remains. Local governments in California have taken the position that: "Long-term statewide planning for needed infrastructure improvements to benefit all of the state's residents should not place this uncompensated burden on individual landowners who are within the TCZ."[142]

4.1.4 Uncertainty about Which Lands to Be Affected by a Corridor

In California local governments have objected to uncertainty in a State Bill about the width of proposed transmission corridors. They cite a 1989 report in which a transmission line corridor was "described as a strip of land varying from two to five miles in width," but the local governments noted that in response to a recent inquiry to the CEC, "there apparently is not yet an "official" answer to the question as to what the CECs current

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137 League of Cities Letter, *supra* note 132.
138 League of Cities Letter, *supra* note 132.
139 League of Cities Letter, *supra* note 132.
140 League of Cities Letter, *supra* note 132.
141 *See* Allan Ingelson, *Environmental Takings of Mineral Rights: US and Canadian Experiences*, 22:1 JOURNAL OF ENERGY AND NATURAL RESOURCES LAW at 1-23 (2004).
142 League of Cities Letter, *supra* note 132, at 2.

thinking is in regards to the width" of a corridor.[143] In December, 2007 the California Government engaged in a twelve month Transmission Corridor Zone Designation Process to designate "corridor zones for future use." The process accounted for the needs and perspectives of key stakeholders to promote consistency and reliability in land use planning to meet future infrastructure demand.[144]

5. CONCERNS ABOUT LAPAA

Notwithstanding the benefits and opportunities the LAPAA discussed earlier in this article, the issues that have been identified in California with electricity transmission corridors have also arisen in Alberta. Some environmental NGOs, landowners and others are opposed to LAPAA,[145] have expressed concern about the broad language in LAPAA.[146] For example, Jeh Custer from the Sierra Club of Canada called the LAPAA as "Orwellian."[147] In 2009, Mike Hudema of Greenpeace argued that "[e]ssentially what this act does is create rights-free zones where the province has unprecedented power to expropriate land and landowners or citizens have even fewer avenues through which to speak out."[148]

LAPAA includes a provision that "[w]hen the land within a Project Area is required by the Crown for or in connection with the public project, the Crown may acquire the land by purchase or expropriation."[149] The Act also provides landowners with some control over the timing and process of a purchase of land by the Crown. Section 6 of the Act requires the Crown to "enter into an agreement with the registered owner to purchase the land at market value" if a land-owner within a designated Land Assembly Project

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143 League of Cities Letter, *supra* note 132, at 3.

144 Terence O'Brien, *Transmission Corridor Zone Designation Process* (11 Dec., 2007), CAL. ENERGY COMM'N,, http://www.cpuc.ca.gov/NR/rdonlyres/4C2E374F-B666-45B7-95F1-FA4EA022FE31/0/TerrenceOBrien_CEC071211.ppt.

145 Darcy Henton, *Groups Protest Alberta Land Assembly Bill* (19 Mar., 2009), NUMBERSWATCHDOG.COM (Mar. 19, 2009), http://www.numberswatchdog.com/news%2009/Groups%20protest%20Alberta%20land%20assembly%20bill.htm (hereinafter Darcy Henton); *see also Commercial Real Estate News* (20 Mar., 2009), REAL ESTATE NEWS EXCHANGE, http://www.renx.ca/Detailed/1694.html.

146 *Id.*

147 Darcy Henton, *supra* note 145.

148 Darcy Henton, *supra* note 145.

149 § 7, LAPAA, *supra* note 2.

Area so requests.[150] A landowner can make such a request "at any time."[151] In cases where the government and landowner cannot agree on a purchase price, the land-owner can "apply to the Land Compensation Board or the Court of Queen's Bench" or another agreed upon mechanism in order to determine the value of the land.[152] As discussed above, under LAPAA landowners will have the option to sell their land and the government will have a duty to purchase the land at market value. Landowners may be unhappy about a government decision to acquire their land; however, providing the landowners with some flexibility in regard to the timing of the eventual transfer will soften the blow. Likewise, the two-year time limit between proposal of a plan and project area approval "is intended to prevent the unfairness of an indefinite freeze, being one of the major complaints that has arisen in Alberta surrounding the designation of transportation and utility corridors around the cities of Edmonton and Calgary in the 1970s."[153]McCalla and Cooper have commented that "[t]o create fairness for the land owner, the Act establishes an ongoing option for the owner to sell to the Crown at 'market value' at any time from the point at which the land is designated as part of the Project Area. In other words, the land owner has the ability, but not the requirement, to 'cash out' and leave."[154] Section 7 of LAPAA makes it clear that private land in a project area can be acquired "by purchase or expropriation;" but as the Minister of Infrastructure has indicated "[LAPAA] does not provide government with any additional land acquisition powers or remove any legislative protection landowners currently have to ensure they receive a fair price for their land."[155] It would appear that expropriation of land will be the last resort for the government. It should also be noted that anyone who acquires an interest in land in the designated corridor area will assume that "interest subject to" LAPAA.[156]

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150 § 6(1), LAPAA, *supra* note 2.

151 LAPAA, *supra* note 2.

152 § 6(2), LAPAA, *supra* note 2.

153 McCalla and Cooper, *supra* note 27.

154 McCalla and Cooper, *supra* note 27.

155 *News Release, Government of Alberta, Alberta Government Amends Bill 19 to Provide Greater Certainty for Landowners* (16 Apr., 2009), http://alberta.ca/ACN/ 200904/25713AB998FE5-FA97-2C03-1BB0B82F3A96BF1B.html.

156 §10, LAPAA, *supra* note 2.

On its face, LAPAA does not appear to grant the province any additional powers of expropriation, at least in regard to private land. It is true that the government will be able to freeze development in project areas, but as argued above, that is better and more efficient that allowing the development of uses incompatible with future plans. Moreover, in response to concerns that the government might be able to freeze development in the project area indefinitely, the government amended LAPAA to include a two-year time limit. Arguably LAPAA provides for a reasonable balance between rights of land owners and the government's desire and need to establish need energy infrastructure. However in her campaign platform the current Premier of the Province of Alberta Alison Redford expressed concerns about limited details on the landowner consultation process outlined for LAPPA and the Land Stewardship Act.[157] The Premier indicated that she supported "improved consultation, and an explicit compensation model".[158] These issues were further considered by the Alberta government. In 2011, the Alberta Government provided its response to the concerns expressed by a number of private landowners and environmental NGOs discussed above. The government amended LAPAA in December 2011 and has elaborated on the rationale for creating LAPAA, in the *Land Assembly Project Area Amendment Act.*[159] Clarifying the objectives of LAPAA, the following text has been added to the preamble in section 2:

> "WHEREAS Alberta is projected to continue growing at a rapid rate;
>
> WHEREAS the Government must plan for any required large scale infrastructure projects, including transportation and utility corridor projects, similar to the Edmonton and Calgary transportation and utility corridors, and water management projects, such as dams and reservoirs;
>
> WHEREAS it is in the public interest that from time to time certain areas of Alberta be designated for major infrastructure projects to ensure that projects can be planned and constructed in an orderly manner;

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157 Premier Alison Redford, Summary of Premier Alison Redford's Campaign Platform—Energy and Environment, Address Before the Calgary Chamber of Commerce at 1 (2011) (hereinafter Alison Redford).

158 *Id.*

159 LAPAAA, *supra* note 2.

> WHEREAS public consultation should be conducted in advance of major infrastructure projects; and
> WHEREAS it is desirable that land owners whose land will be required for major infrastructure projects are appropriately compensated for their lands and have recourse to the Land Compensation Board and the Courts."

Other amendments to section 2 of LAPAA in 2011 include additional details on the projected completion dates for projects and the minimum size of an area or areas (1000 hectares) to be included in a proposed "Project Area".[160] Section 5 of the *Land Assembly Project Area Amendment Act* clearly indicates that the Alberta EA applies to lands that have been taken by the government for a corridor; that the government must either purchase the private land at fair market value or the government must expropriate the land and in such a process the landowner can elect to have the Court of Queen's Bench determine the value of the land. This amendment also provides increased certainty and clarity for landowners in the land acquisition process.

5.1 MANAGING ENERGY INFRASTRUCTURE DEVELOPMENT—GOVERNMENT COORDINATION CHALLENGES

As has been the experience in California, energy corridors can pose challenges to manage and coordinate existing agency mandates and activities. "The Alberta corridor will require one department, such as INFRAS, to acquire, administer, and coordinate the management of the energy corridor lands. The Minister of INFRAS manages Transportation and Utility Corridor (TUC) lands by granting leases, licenses, utility rights of way, and rights of entry.[161] The TUC regulations require that any individual or organization proposing an activity on the TUC lands that will likely cause a surface disturbance to obtain the written consent of the Minister of INFRAS.[162] Other government departments and agencies also require the consent of the Minister of INFRAS prior to exercising their powers that would affect TUC lands, or prior to authorizing any operation

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160 § 4, LAPAAA, *supra* note 2.

161 Government Organization Act, R.S.A. 2000, c. G-10, Schedule 11, § 102 (Can. Alta.).

162 *Transportation/Utility Corridor (TUC) Program Policy* (16 Apr., 2004), ALTA. INFRASTRUCTURE, http://www.infrastructure.alberta.ca/TUCContent/tucpolicy.pdf; §5 of the Regulations, at 2.

or activity that would cause a surface disturbance on the TUC lands.[163] Apart from INFRAS, other provincial departments involved in issuing approvals for activities on TUC lands that may also be involved in authorizations for the development of pipelines, power lines, rail lines, and other types of utility infrastructure in the Alberta corridor include the ERCB, the Alberta Utilities Commission, Alberta Environment and Sustainable Resource Development, and Ministry of Transportation.

In Alberta the statutory framework for an energy transportation corridor reflects a centralized land use planning decision making process. Drawing from the previous experience with more limited TUCs, an agency such as the Ministry of Infrastructure (INFRAS) with the legislative authority[164] to administer an energy transportation corridor on behalf of the government will be used. What is the appropriate balance for a government between centralized versus decentralized decision-making for energy transportation corridors? Arguably it is more important that the economic, environmental and social issues arising from the designation of lands to be used for the provincial energy corridor consider the overall provincial interest rather than strictly local concerns. Arguably a centralized approach will facilitate adoption of overall best interest of the province rather than deferring to more limited local interests objecting to the use of lands for a corridor. In Alberta, centralized decision making provides a more uniform and consistent approach to energy pipeline, power line, road and rail infrastructure in the designated corridor area, and minimum standards for the energy transportation conduits throughout the province.

As has been the experience with smaller corridors such as TUCs several provincial government departments that will be involved in the establishment and management of the major energy transportation corridor as well as the authorization/approvals for the different types of uses in the corridor to ensure that proposed company infrastructures adhere to the corridor concept.[165] Managing the corridor will prompt the provincial government to acquire lands currently not owned by the provincial

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163 §4, *id.*

164 *See* Calgary Restricted Development Area Regulations, Alta. Reg. 212/76 (Can.); Edmonton Restricted Development Area Regulations, Alta. Reg. 287/74 (Can.); Sherwood Park West Restricted Development Area Regulations, Alta. Reg. 45/74 (Can.).

165 *Corridors for Linear Infrastructure Stakeholders Workshop Report* (24 Jul., 2007), ALTA.'S INDUS. HEARTLAND ASS'N, http://www.industrialheartland.com/images/stories/lic_heartland_wksp_report_july_07.pdf, 8

government from private land owners along the planned routes.[166] As the administrator of the TUC, the Minister of INFRAS has the mandate to purchase and/or expropriate any land for a TUC.[167] However, administration of some of the lands acquired for the TUC as determined by the Minister of INFRAS can be transferred to the Minister of Environment & Sustainable Resource Development who is responsible for managing public lands.[168]

5.1.1 Alberta Environment and Sustainable Resource Development

Alberta Environment and Sustainable Resource Development (SRD) is a provincial government department that is responsible for environmental protection under the *Environmental Protection and Enhancement Act* (EPEA).[169] The department regulates the development and use of provincial public lands, the management of fish and wildlife resources, and oversees the development of Alberta's forests.[170] The department is responsible for managing environmental protection including air, land, waste, water, cumulative effects, and climate change through environmental stewardship, environmental assurance, and environmental management.[171] Alberta's regulatory framework for more sustainable industrial development includes six core business functions—project evaluation; approvals; monitoring; enforcement' setting standards, objectives and guidelines; and decommissioning and reclamation.[172] Project evaluation may be a relatively straightforward process for smaller, routine activities but is more complex for large projects in environmentally sensitive areas.[173] Environmental assessment is part of the project evaluation function and the most comprehensive and transparent form of environmental review is the preparation of an Environmental Impact Assessment (EIA) report which typically considers the activities in the area around the project as well

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166 *Id.* at 6.
167 Restricted Development Area Regulations, Alta. Reg. 287, § 8(1).
168 *Id.* § 8(2).
169 The EPAA, *supra* note 106.
170 GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV., http://www.srd.gov.ab.ca.
171 *About Us*, GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV., http://environment.alberta.ca/01549.html.
172 *Alberta's Environmental Assessment Process*, GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV., http://environment.alberta.ca/2824.html (hereinafter Assessment Process Information).
173 *Id.*

as the resource sustainability.[174] Environmental assessment is required for projects under EPEA when the complexity and scale of a proposed project, technology, resource allocation, or siting considerations create uncertainty about the exact nature of the environmental effects, or result in a potential for significant adverse environmental effects.[175] The *Environmental Assessment (Mandatory and Exempted Activities) Regulation, AR 111/93*[176] lists those activities that must undergo environmental impact assessments.

Construction of energy infrastructure in a corridor can impact water resources.[177] Freshwater Resources are also managed and regulated by the department. Under the *Public Lands Act*, the Alberta government owns the beds and shores of most permanently naturally occurring rivers, streams, watercourses, lakes and other water bodies in the province. Any proposed activity that will disturb the bed and shore of a waterbody, regardless of whether bed or shore are Crown-owned, an approval by the department is required under the *Water Act*.[178] A License of Occupation (LOC) is required under the *Public Lands Act* to build any structures that could have a negative impact on the bed and shore of a waterbody. If the activity will result in the diversion and/or use of water, an approval may also be required from the department under the *Water Act/Regulations* and any pertinent codes of practice.[179] Some of the provincial regulatory documents and legislation relevant to water protection in the proposed energy corridor are: the *Environmental Protection and Enhancement Act*,[180] its Regulations, Codes of Practice, and Standards and Guidelines;[181] *Water Act*[182] and its Regulations; *Water: Codes of Practice*,[183] specifically, *Code of Practice for*

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174 Assessment Process Information, *supra* note 172.

175 *See Alberta's Environmental Assessment Process*, GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV., http://environment.gov.ab.ca/info/library/6964.pdf.

176 Environmental Assessment (Mandatory and Exempted Activities) Regulation, Alta. Reg. 111/93 (Can.).

177 For consideration of water impacts and permitting requirements associated with a transportation corridor in another Canadian jurisdiction see *Establishing Transportation Corridors in Nunavut – A Regulatory Perspective* (7 Apr., 2011), BAFFINLAND IRON MINES CORPORATION, http://www.nunavutminingsymposium.ca/wp-content/uploads/2011/04/3-Establishing-Transportation-Corridors-in-Nunavut.pdf.

178 R.S.A. 2000, c. W-3 (Can. Alta.).

179 *Id.*

180 Environmental Protection and Enhancement Act, R.S.A. 2000, c. E-12 (Can. Alta.).

181 *Legislation/Guidelines: Environmental Protection/Enhancement*, GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV., http://www.environment.alberta. ca/01530.html.

182 *Supra* note 178.

183 *Water: Codes of Practice*, GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV.,

Pipelines and Telecommunication Lines Crossing a Water Body,[184] *Code of Practice for the Temporary Diversion of Water for Hydrostatic Testing of Pipelines,*[185] *Environmental Code of Practice for Watercourse Crossings,*[186] *Administrative Guide for Approvals to Protect Surface Water Bodies under the Water Act,*[187] *Provincial Wetland Restoration/Compensation Guide,*[188] and *Wetland Management in the Settled Area of Alberta – An Interim Policy.*[189] As has been the experience with smaller TUCs, administration of some parts of the lands acquired for the corridor may be transferred to the Minister of SRD. Moreover, SRD will be involved in routing the corridor where fish, wildlife and forestry resources will be disturbed. Legislation governing SRD approvals relevant to the corridor: the *Forest Reserves Act,*[190] *Forests Act,*[191] *Public Lands Act,*[192] *Surface Rights Act,*[193] and *Wildlife Act.*[194] As in the case of TUCs, provisions in the *Public Lands Act* may not apply to the corridor. A different procedure will be in place for acquiring surface rights and access to corridor lands. Other governmental institutions have a significant public land base: the Special Areas Board which

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http://environment.alberta.ca/01330.html.

184 Water (Ministerial) Regulation, Alta. Reg. 205/1998, Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body (Can.).

185 Water (Ministerial) Regulation, Alta. Reg. 205/1998, Code of Practice for the Temporary Diversion of Water for Hydrostatic Testing of Pipelines (Can.).

186 Water (Ministerial) Regulation, Alta. Reg. 205/1998, Code of Practice for Watercourse Crossing (Can.).

187 *Administrative Guide for Approvals to Protect Surface Water Bodies Under the Water Act* (Dec., 2001), GOV'T OF ALTA. ENV'T AND SUSTAINABLE RES. DEV., http://environment.gov.ab.ca/info/library/6208.pdf.

188 *Provincial Wetland Restoration/Compensation Guide* (Feb., 2007), ALBERTA NORTH AMERICA WATERFOWL MANAGEMENT PLAN (NAWMP) PARTNERSHIP, http://environment.alberta.ca/documents/Provincial_Wetland_Restoration_Compensation_Guide_Feb_2007.pdf.

189 *Wetland Management in the Settled Area of Alberta: An Interim Policy* (May, 1993), ALBERTA WATER RESOURCES COMMISSION, http://environment.gov.ab.ca/info/library/6169.pdf.

190 Forest Reserves Act, R.S.A. 2000, c. F-20 (Can. Alta.) (providing a process for acquisition of land in order to sustain a forest reserve).

191 Forests Act, R.S.A. 2000, c. F-22 (Can. Alta.) (establishing an annual allowable cut in coniferous and deciduous forests, prohibiting persons from damaging the forest in any way, and allowing the Minister to construct and maintain forest recreation areas).

192 Public Lands Act, R.S.A. 2000, c. P-40 (Can. Alta.) (dealing with the selling and transferring of public land, as well as the management of rangeland and activities permitted on designated land).

193 Surface Rights Act, R.S.A. 2000, c. S-24 (Can. Alta.).

194 Wildlife Act, R.S.A. 2000, c. W-10 (Can. Alta.) (governing the management of wildlife as a Crown resource and addressing conservation of species at risk (endangered or threatened)).

administers public land in special areas; Municipal Affairs and Local Municipalities which administer public lands for municipal purposes.

In 2011, Alberta Premier Alison Redford stated that the "key elements of a Canadian energy strategy should include: Making Alberta the leader in sustainable hydrocarbon production"…and at the "top of the agenda,…a world-class regulatory and monitoring system including cumulative impact assessment…[195] The Alberta Government has implemented a "State of the Environment" reporting program to track "environmental quality outcomes"[196] Under this program cumulative environmental effects are now being monitored and evaluated through condition indicators, pressure indicators, response indicators and performance indicators. The analysis of cumulative effects is "place based," an approach that considers the "different needs of regions within the province," and incorporates "performance based management" that employs adaptive approaches "to ensure results are measured and achieved."[197]

6. AN ENERGY TRANSPORTATION CORRIDOR—PROMOTING SUSTAINABLE DEVELOPMENT?

Fossil fuel development with higher GHG emissions than renewable energy sources and the associated risks associated with global warming does not protect air quality to the extent that increased renewable energy development can. However the reality is that numerous countries including Canada, India, the United States and China continue to rely to a significant extent on the combustion of fossil fuels for their energy needs. Sustainable development is a form of development that balances economic, environmental and social objectives and strives to promote harmony among human beings and the environment. The concept focuses on the quality of economic growth and guides strategic planning to minimize environmental degradation and social conflict. In terms of reducing social conflict, energy transportation corridors such as the Alberta corridor prompt strategic land use planning that can reduce social conflict. The experience in California underlines the importance of meaningful consultation with affected

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195 Alison Redford, *supra* note 157.
196 GOV'T OF ALBERTA. ENV'T AND SUSTAINABLE RES. DEV., http://environment.alberta.ca/.
197 *Id.*

residents and local governments as part of the strategic land-use planning process. To promote sustainable development, as part of the strategic land use planning process more attention needs to be devoted toward the evaluation of cumulative effects and integrating additional renewable energy technologies and their transportation infrastructure into the energy mix.

Energy transportation corridors offer an alternative to the case-by-case energy project review approach by government that has been discussed; the corridors prompts strategic planning and land-use, which facilitate increased sustainable development. With regards to the environmental benefits of a corridor, the multiple use energy and transportation corridors can reduce the environmental impact of utility lines and pipelines infrastructure by concentrating the facilities in a single area. Another benefit of consolidating energy and transportation infrastructure into a single corridor is the reduction in the land surface footprint of pipelines, power lines, roads and rail lines so that less land is disturbed by energy infrastructure both in the near term and longer term. Pipeline blowouts or train derailments will be confined to the more restricted energy transportation corridor area that can facilitate a faster emergency response to chemical spills and therefore minimize the extent of the environmental impacts from a spill.

From an economic development standpoint "it is important to understand how pipeline access, for example, fits into the government decision-making process for the approval of energy transportation infrastructure. If a hydrocarbon developer is planning a new energy facility it needs a high degree of certainty regarding the availability and cost of access pipelines either to bring the feedstock or to transport the products out to justify a significant capital investment. The availability of a designated energy transportation corridor lowers this risk considerably. Energy corridors can ameliorate the problem associated with the routing of transmission lines and pipelines by securing the rights of way years before a project is proposed. Providing a ready-to-go route for electricity transmission lines, hydrocarbon pipelines and other types of energy infrastructure can increase the interest of developers in energy infrastructure and avoid the headache of last minute negotiations with land owners and the risk of an unsuccessful outcome. Energy transportation corridors encourage project investment by providing developers with increased project security.

7. Conclusion

The land use planning and energy transportation corridor creation experience in Alberta and California provide insight into issues encountered by two governments that have legislated energy transportation corridors. In Alberta challenges posed by the increased demand for oil and gas development, population growth, increased electricity demand, increased scrutiny of oil sands environmental and social impacts and interest in more sustainable development within the province have prompted the creation of a major energy and transportation corridor. It is anticipated that the corridor will consist of a substantial ribbon of land that encompasses multiple energy, human and communications transportation modes and facilities that will extend from the Athabasca oil sands region in northeastern Alberta, through the industrial heartland, linking the provincial capital city of Edmonton to the city of Calgary, headquarters of the Canadian oil and gas industry and continuing south to the U.S. border. In addition to providing a stable source of oil and gas via pipelines to U.S. markets, the transportation corridor can incorporate major electricity transmission lines, CO_2 pipelines, road, railway, fiber optic and telecommunications infrastructure. The energy corridor will require strategic land use planning rather than simply reacting to economic and population growth on an ad hoc basis.

Three statutes ALSA, LAPAA and the *Land Assembly Project Area Amendment Act, 2011* have been created by the Alberta Government to provide comprehensive legislative and policy tools to manage energy development on public and private lands and mitigate negative environmental and social impacts. ALSA provides that regional land use plans must be developed that are directed toward balancing economic development along with social and environmental impacts from energy, other forms of industrial development, forestry, agriculture, ranching and other activities. The plans are to consider the varying needs of residents in different regions. The provincial government must approve of the regional plans before they are implemented and it has the final decision on important energy corridor issues including the acceptable environmental and social risks associated with hydrocarbon development, and the level of that industrial development in certain areas of the province including those areas that will be incorporated into the energy transportation corridor.

The approach to land-use planning embodied in ALSA and applied to the Alberta energy transportation corridor can promote more sustainable development. Unlike the previous incremental, sequential, reactive, project-

by-project approach, the corridor reflects an integrative and proactive approach that requires strategic planning. Focusing energy infrastructure into a single corridor will reduce the land surface footprint and facilitate quicker emergency response times to mitigate the environmental impacts from oil and natural gas pipeline leaks and explosions.

As illustrated by the California experience with electricity transmission corridors, local/municipal governments can play a useful role as a conduit for public opinion and the management of lands in energy transportation corridors. The California experience suggests that public participation can assist in anticipating and addressing the issues that concern private landowners and local governments, reduce social conflict and promote more sustainable development. Effective decisions will take into account local and regional values and priorities, the jurisdictional issues between different levels of government, departments and agencies. In Alberta municipal governments have the power to provide input into the energy development decision-making process, but local governments do not have the final say on energy transportation corridor issues.

The Alberta corridor will prompt the government to negotiate the acquisition of some private lands to be incorporated into the corridor. LAPAA and the *Land Assembly Project Area Amendment Act 2011*, provide the provincial government with the ability to secure private lands for energy transportation infrastructure a considerable number of years in advance of construction prior to the announcement of any projects, to minimize objections to infrastructure projects directed toward the public good. The 2011 amendments that suggest that the government will undertake consultation with landowners prior to major infrastructure projects and the government will purchase private property at its fair market should address a number of the concerns of private landowners about LAPAA. The amendments should minimize social conflict and promote more sustainable development.

Growing congestion from increased activity and population growth in the province has underlined the importance of strategic land use planning for more sustainable development. In this context, the Alberta energy transportation corridor is an important step towards more sustainable land use planning and the construction of energy-supply infrastructure to address the needs of future generations who will reside in the province.

NATURAL RESOURCE MANAGEMENT AND CONFLICT RESOLUTION IN SUB-SAHARAN AFRICA: THE CASE OF NIGERIA

LeticiaK. Nkonya[*]

ABSTRACT

The increasing population in sub-Saharan Africa (SSA) is exerting pressure on natural resources. This leads to land degradation and conflicts over the scarce resources. This study shows that community-level natural resource management (NRM) is effective and can reverse the severe land degradation in sub-Saharan Africa (SSA). However, the effectiveness of the community level NRM is dependent on the vertical linkage of the institutions, which empowers local communities to manage natural resources. Nigeria is among the countries which have shown effective decentralization. Unlike many other countries in SSA, Nigeria has given mandate to customary institutions to provide conflict resolution and other local governance duties. This has strengthened the vertical linkage and has led customary institutions to be the most common institution for conflict resolution. However, the role of customary institutions has weaknesses of operating in communities with multiple ethnicities. This suggests the need to strengthen the formal local institutions to provide the needed balanced conflict resolution. Hence there is need to strengthen further Nigeria's decentralization such that it is more responsiveness to people's needs and empowering communities to determine their development.

1. INTRODUCTION

Natural resource conflicts are increasing in Sub-Saharan Africa (SSA) due to a number of factors.[1]Heavy natural resource dependence,

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climate change and increasing population have all led to greater natural resource conflicts.[2] Natural resource degradation has also been contributing to lower land productivity. About 13% of the global land degradation in 1981-2003 occurred in SSA – the most severe degradation in the world.[3] These and other changes have put pressure on land around the world, leading to the competition of several actor groups and organization over access and use rights.[4]The recent foreign land acquisitions in SSA – also known as "land grabbing" illustrate this and in itself created an environment for land conflicts.[5]

Given these trends and patterns, a serious question arises on how could natural resource conflicts be minimized or completely eliminated? Empirical evidence shows that strong national and local institutions – defined as formal and informal rules governing economic production and exchange[6] – can significantly reduce or eliminate natural resource conflicts and can lead to sustainable natural resource management.[7] A wide-ranging review of natural resource management by Blaikie (2006),[8] shows that strong local organizations are a necessary condition but not sufficient by themselves to assure a sustainable management of natural resources. Other factors – such as the vertical linkage with national and international

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1 P. Collier, *Natural Resources and Conflict in Africa*, THE BEACON, Forum for International Issues (2009), available at http://the-beacon.info/countries/africa/natural-resources-and-conflict-in-africa/.

2 *Supra* note 1; D.A. Mwiturubani & J. van Wyk, *Climate Change and Natural Resources Conflicts in Africa. Institute for Security Studies*, MONOGRAPH 170 (2010), available at http://www.issafrica.org/uploads/Mono170.pdf

3 Z. G. Bai, D. L. Dent, L. Olsson, & M. E. Schaepman, *Global Assessment of Land Degradation and Improvement: 1. Identification by Remote Sensing*, GLADA REPORT 5, Wageningen: The Netherlands (2008) at 23.

4 The High Level Panel of Experts (HLPE), *Land Tenure and International Investments in Agriculture*, A Report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security: Rome (2011) at 8-9.

5 **Rights and Resources Initiative (RRI), *Turning Point: What Future for Forest Peoples and Resources in the Emerging World Order?* Rights and Resources Group: Washington, D.C. (2012) at 18.**

6 D.C. North, *Institutions, Institutional Change, and Economic Performance*, Cambridge University Press (1990) at 3-4.

7 P. Blaikie, *Is Small Really Beautiful? Community-based Natural Resource Management in Malawi and Botswana*, WORLD DEVELOPMENT34(11), (2006);R. Heltberg, *Determinants and Impact of Local Institutions for Common Resource Management*,6 ENVIRONMENT AND DEVELOPMENT ECONOMICS(2001), pp.183-208;E. OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION: POLITICAL ECONOMY OF INSTITUTIONS AND DECISIONS, Cambridge University Press (1990) at p.19.

8 P. Blaikie, *supra* note 7.

institutions, and organizations and the horizontal linkage with other local institutions– play a key role in sustainable natural resource management and conflict resolution.[9]

The focus of this study is on natural resource conflicts and management at the community level. The study examines the types of institutions used for collective natural resource management and conflict resolution. Nigeria – the most populous country in Africa – is used as a case study country. Nigeria is located in West Africa, along the Gulf of Guinea of the Atlantic ocean. Although the country is well endowed with agricultural resources and oil wealth, poverty continue to be the biggest challenge. During the 1980's and **1990's Nigeria** experienced economic decline, falling standard of living, and an increase in food insecurity. Nigeria's population grew at an annual rate of3.1% , while agricultural production grew at a slower rate- 2.5% a year.[10]Previous efforts by the Federal Government of Nigeria to improve food security failed mainly due to inadequate funding, and in some cases there was lack of commitment in implementation of agricultural programs designed to improve food security.[11]

In the1990s, the Federal Government of Nigeria embarked on a project called the National Fadama Development Project (NAFDP) in its continued efforts to improve food production and raise the standard of living of people living in the *Fadamas. Fadama*is a *Hausa* language word meaning flood plains.[12] The NAFDP was financed by the World Bank and implemented by the Federal Ministry of Agriculture and Rural Development (FMARD). The First National *Fadama* Development (NFD) Project (known as *Fadama* I) was implemented in 1993–1999 with the aim of improving crop production by supporting the use of low-cost irrigation

9 D.R. Armitage, *Adaptive Capacity and Community-Based Natural Resource Management*, ENVIRONMENTAL MANAGEMENT, 35(6), pp. 703-715 (2005); E. OSTROM, T. DIETZ, N. DOLSAK, P. STERN, S. STONICH, &E. U. WEBER, THE DRAMA OF THE COMMONS,(2002) at pp. 293-296.

10 M.O. OJO, FOOD POLICY AND ECONOMIC DEVELOPMENT IN NIGERIA, (1990) at p. 205.

11 A. E.Agwu& H.O. Abah, *Attitude of Farmers towards Cost-Sharing in the Second National Fadama Development Project (NFDP-II): The Case of Kogi State of Nigeria*, JOURNAL OF AGRICULTURAL EXTENSION13 (2), (2009) pp. 92-106.

12 M.A.Oladoja& O.A. Adeokun,***An Appraisal of the National Fadama Development Project (NFDP) in OgunState, Nigeria***, AGRICULTURAL JOURNAL 4(3), (2009) pp. 124-129.

technology.[13] However, *Fadama* I lacked full participation of all stakeholders, so the Government of Nigeria expanded the scope and design of *Fadama* I. As a result, *Fadama* I, which used a public sector domination approach, evolved to the Second National *Fadama* Development Project (*Fadama* II). *Fadama* II used a community-driven development (CDD) approach that that was based priorities defined by community members, and focused on stakeholders' participation at every stage of project development.[14] *Fadama*II whose implementation became effective in 2004, was funded by the World Bank and the African Development Bank.[15]
The implementation of *Fadama* III started in 2008 as a follow-up project to *Fadama*II. While *Fadama* I focused only on crop production, both *Fadama*II and III included all natural resource users in the *Fadama* area: farmers, livestock keepers, fishers, hunters, service providers(such as government agencies, private operators and professional/semiprofessional associations) and marginalized groups[16]such as women, the youth, people with disabilities, the elderly, and HIV/AIDS infected people. The focus was the promotion of private sector, client participation, conflict resolution, and poverty reduction.[17] *Fadama*III which is expected to end in 2013,[18]is jointly funded by the Federal Government of Nigeria, the World Bank, and participating states.[19] It is designed to improve the capacities of beneficiaries who are mainly local community members organized into *Fadama* User Groups (FUGs) and *Fadama* Community Associations (FCAs).[20] *Fadama*

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13 African Development Fund (ADF), *Republic of Nigeria Fadama Development Project Appraisal Report* (2003), available at http://www.afdb.org /fileadmin/uploads/afdb/Documents/Project-and-Operations/NG-2003-156-EN-ADF-BD-WP-NIGERIA-AR-FADAMA-DEVELOPMENT-PROJECT.PDF

14 Ibid, at 2.

15 V. L.Ezra, B. N.Vachaku, E. Ifeanyi, & C.I. Okafor, *An assessment of the National Fadama II Project in Kagarko Local Government Area of Kaduna State,* JOURNAL OF GEOGRAPHY AND REGIONAL PLANNING, 5(6), (2012) pp. 189-197, available at http://www.academicjournals.org/JGRP

16 **Echeme, I. Ibeawuchi,** &C.C. **Nwachukwu,** *An* **investigation** *on the* **Impact** *of* **FADAMA II Project Implementation** *in* **Imo State,** AMERICAN JOURNAL OF SCIENTIFIC AND INDUSTRIAL RESEARCH **1(3)**,(2010) pp. 532-538.

17 Federal Republic of Nigeria, *Third National Fadama Development Project, Volume I: Project Implementation Manual(PIM),* Federal Ministry of Agriculture and Water Resources(2009) at 2,available at http://www.fadama.net/pdf_files/Project%20Implementation%20Manual%201.pdf

18 Ibid at 5.

19 P.C. Ike, *An Analysis of the Impact of Fadama III Project on Poverty Alleviation in Delta State, Nigeria,* ASIAN JOURNAL OF AGRICULTURAL SCIENCES, 4(2),(2012) pp. 158-164.

20 Ibid.

III covers the entire country and has over 650,000 beneficiaries. The project provides funds to beneficiaries who have prepared and designed an economic activity. For example, the most common economic activity is agricultural processing and irrigation. *Fadama* III project pays for about 70% and beneficiaries pay 30% of the value of the processing machines or irrigation pumps.[21]

This article uses community level data collected in 2009 from *Fadama*III project to determine the institutions used for natural resource management and conflict resolution. The major reason for investigating conflicts is that the first phase of *Fadama* project (*Fadama* I) only supported crop producers in the floodplains (*Fadamas*) and ignored livestock producers, fishers, pastoralists, hunters, gatherers and other resource users.[22]The major reason for supporting crop producers during *Fadama*I phase was Nigeria's quest to food self-sufficiency, which was biased towards crops, a sector which contributes about 85% of the agricultural GDP while other sectors contribution (with percent contribution in bracket) – livestock (10%), fisheries(4%) and forestry (1%).[23]This created a bias towards crop producers and contributed to increase in conflict among *fadama* users. Additionally, population pressure and land degradation in the *fadama* areas has led to reduction of the land and water resources to support the economic activities of the population. These changes contributed to the increase in conflicts over the *fadama* resources. The crop producers– who dominate the *fadama* resource use - do not consider the other stakeholders as equal partners. For example, as seasons change, pastoralists increasingly find it difficult to move around in pursuit of pasture and water.[24] This has exacerbated conflicts

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21 Federal Republic of Nigeria, *supra* note17, at10.

22 U. A. Madu, and J. Phoa, *The* **Effect** of **Fadama II** on **Agro-Processing Among Farmers** *in* **Adamawa State, Nigeria,** GLOBAL ADVANCED RESEARCH JOURNAL OF AGRICULTURAL SCIENCE 1(5), (2012) pp. 117-122.

23 Federal Government of Nigeria(FGN), *Report of the Vision 2020 National Technical Working Group On Agriculture & Food Security* (2009),available at http://www.npc.gov.ng/vault/NTWG%20Final%20Report/agriculture%20&%20food%20security%20ntwg%20report.pdfat 17.

24 R. Blench, , *Conflict between Pastoralists and Cultivators in Nigeria*, Review Paper Prepared for DFID, Abuja, Nigeria (2003) at pp. 5 &8; M. Tiffen, *Population Pressure, Migration and Urbanization: Impacts on Crop-Livestock Systems Development in West Africa,* in Sustainable Crop-livestock Production for Improved Livelihoods and Natural Resource Management in West Africa: Proceedings of an International Conference held at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria,19–22 November 2001 (T. O. Williams, S. A. Tarawali; P. Hiernaux& S. Fernandez-Rivera, eds., 2004) at 10.

between farmers and pastoralists. Dwindling pasture and water resources has caused pastoralists to move to new areas where language, religion and landholding patterns are unfamiliar.[25]The problem of land rights and ownership common among pastoralists also contributes to the conflicts.[26] For example, in northern Nigeria customary rights to grazing and passage of livestock are always less defensible than those of sedentary farmers since the nomadic herders cannot remain in a place to claim their land rights.[27] Consequently, about 98% of all conflicts over resources in Nigeria occur between farmers and pastoralists.[28] Although observations have shown that the frequency of violent clashes has increased since 1980, the government has not taken significant steps to address them.[29] The statutory conflict resolution institutions have not been very effective- a common feature found in many decentralized governments in SSA. The statutory institutions in Nigeria are the Federal Government, State Government and Local Government (see Figure 2). They are less effective mainly because of the limited financial and human resources to enforce their laws and regulations,[30] and corruption that "has become all pervading, unabashed, uncontrolled and persistent."[31]This does not mean that customary institutions are perfect, but local people prefer to use them because of their effectiveness, popular legitimacy, and acceptance. They are less corrupt because they are "enforced through intensive social interactions," that

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25 R. Blench., *supra* note 24, at 9.

26 **A.Bot & J. Benites, Conservation Agriculture: Case Studies** in **Latin America** and **Africa,** Food and Agriculture Organization of the United Nations(2002) at 45;R. Leonard & J. **Longbottom, Land Tenure Lexicon**: A Glossary of Terms from English and French Speaking West Africa, International Institute for Environment and Development (2000) at 43.

27 M. Mortimore, *Hard Questions for Pastoral Development: A Northern Nigerian Perspective*, in **Elevage Et Gestion De Parcours Au Sahel, Implications Pour Le Development** (E. Tielkes, E. Schlecht, & P. Hiernaux, eds.,101-114, Verlag Grauer, Stuttgart, German, 2000).

28 P. Schoen, Hassan, U., and Okoli, P., *Resource Use Conflict Management Study in Nigeria*, African Development Bank (November – December, 2002).

29 R. Blench, *supra* note 24, at 9.

30 **Food and Agricultural Organization (FAO), Experience of Implementing National Forestry Programmes in Nigeria, FAO(2003) at 10 and 11; R. Heltberg, Determinants and Impact of Local Institutions for Common Resource Management, Environment and Development Economics, 6(2), (2001). pp. 183-208**

31 P. O.Oviasuyi, W. Idada, & L. Isiraojie, *Constraints of Local Government Administration in Nigeria*, JOURNAL OF SOCIAL SCIENCE24(2), (2010) pp. 81-86.

enable local people to watch each other closely, and the violation of customary laws is highly costly to the individual.[32]

The rest of the paper is divided as follows. The next section provides a brief description of legal pluralism in sub-Saharan Africa. This is followed by a discussion of institutions for natural resource management and conflict resolution in Nigeria. This is followed by discussion on the data used. Discussion of the results and their implications follow. The last section concludes the paper and draws policy implications.

2. LEGAL PLURALISM AND NATURAL RESOURCE MANAGEMENT INSUB - SAHARAN AFRICA

The multiplicity of institutions - commonly known as legal pluralism[33] – i.e., presence of more than one legal order – the multiple local institutions ranging from formal to informal exists in many communities could present challenges if such institutions compete. The common type of legal systems found in many African countries include: statutory, customary, religious, organizational, and project/donor laws.[34] These different kinds of legal systems tend to interact, coexist, and in some situation overlap. However, they do not have equal power status; statutory institutions have more power than other institutions.[35] This does not mean that statutory institutions are more effective than others. Other institutions may also be more effective and more relevant in different places, times, and for different groups of people.

Therefore, to be effective, such pluralistic legal system needs to work synergistically and need to be networked horizontally and vertically linked, taking advantage of the comparative advantage of each institution.[36] Horizontal linkage entails cooperation among organizations working at comparable levels. For example, at the community level, there are local

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32 Y. Hayami, *Community, Market, and State,* in INTERNATIONAL AGRICULTURAL DEVELOPMENT (Eicher, K. Carl, & Staatz, John M., eds., 90-102, (1998) at 93.

33 R. Meinzen-Dick, and R. Pradhan,*Legal Pluralism and Dynamic Property Rights,* Collective Action and Property Rights (CAPRi), Working Paper No. 22(2002) at p. 4.

34 Ibid at 3.

35 Ibid at 4.

36 F. Berkes, *Cross-Scale Institutional Linkage Perspective from the Bottom Up,* in The Dram of the Commons: Committee on the Human Dimensions of Global Change(O. E. T. Dietz, & N. Polsak, P. Stern, S. Stovich, &E. Weber, eds., 293-322, Washington, DC: Science Academy, 2002) at p. 293.

government councils, religious organizations, customary institutions and projects, economic and socials bodies that operate simultaneously. Formal local institutions have the advantage of implementing formal rules and regulations in rural communities with greater ethnic and cultural diversity.[37] Customary institutions also have a greater advantage in implementing land administration in areas with ethnic uniformity and poor formal government institutions. Vertical linkage – the relationship between the lower institutions (e.g. LGA in Nigeria) with the higher order institutions (e.g. state and federal government) is the key to ensuring that the local communities have the mandate to enact bylaws and enforce their compliance. Since vertical linkage empowers and gives local institutions mandate to enact and enforce regulations, countries with strong decentralization tend to have stronger local institutions.[38] In some countries like Nigeria, customary institutions are given legal mandate to allocate land and resolve conflicts (see Figure 2).

One of the major reasons behind the failure of centralized governments to effectively manage natural resources is the lack of involvement of local communities in managing and benefiting from natural resources, corruption, and limited financial and human resources for managing resources.[39] This exclusion creates alienation, which in turn leads to poor cooperation between local communities and land users. Decentralization efforts took a center stage in efforts to address the poor management of natural resources by central governments after degradation in resources managed by central governments.[40] This enhanced the recognition of the role of local communities and their institutions. It is estimated that about one-quarter of forests in developing countries are

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37 A. R. Poteete,& E. Ostrom, *Heterogeneity, Group Size and Collective Action: The Role of Institutions* in FOREST MANAGEMENT, DEVELOPMENT AND CHANGE, 35(3), (2004) pp. 435-461.

38 Nkonya E., J. von Braun, J. Koo, and Z. Guo, *Global Extent of Land Degradation and Its Human Dimension,* in *Principles of Sustainable Soil Management in Agroecosystems* (R. Lal, and B. Stewart, eds., CRC Press Taylor Francis Group , 2012).

39 Q. R Grafton, *Governance of the Commons: A Role for the State?* LAND ECONOMICS76(4), (2000) pp. 504-517.

40 A. Agrawal, and R.C. Jesse, *Accountability in Decentralization: A Framework with South Asian and West African Cases,* THE JOURNAL OF DEVELOPING AREAS 33, (1999) pp. 473-502; N. Devas, & U. Grant, *Local Government Decision-Making—Citizen Participation and Local Accountability: Some Evidence from Kenya and Uganda,* Public Administration and Development23(4), (2003) pp. 307–316.

under some form of community-based forest management.[41] The share of community-based managed forests is also increasing due to decentralization efforts and promotion of community forest management by nongovernmental organizations (NGOs) and international organizations.[42] However, local communities' ability to effectively manage natural resources is negatively affected by the low human capacity and limited financial resources to manage natural resources. Hence, one condition for successful community resource management is organizational supply, which is determined by the presence of community members or organizations with substantial leadership or other assets.[43]

A recent study in Malish owed that communities use a variety of institutions for land allocation and conflict resolution but the customary institutions were the most preferred (**Error! Reference source not found.**). About 60% of respondents preferred customary institutions (local chiefs and elders) to democratically-elected central and local government officials. This is a reflection of the poor local government performance.

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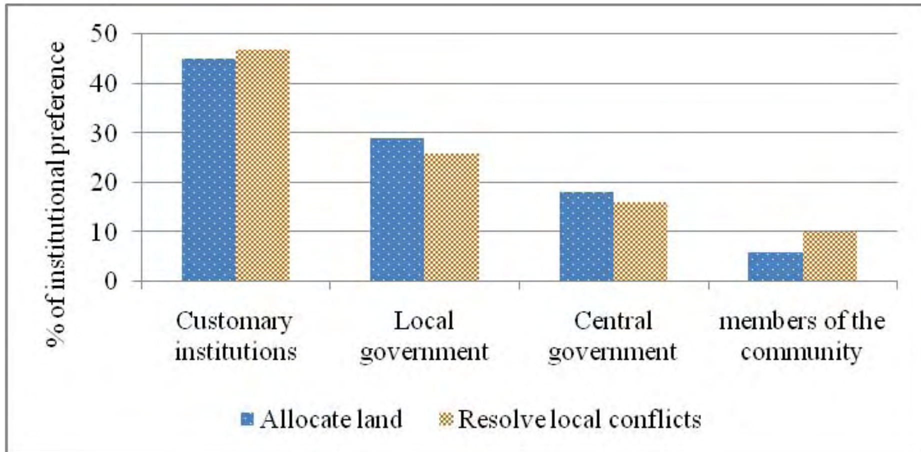
41 Food and Agriculture Organization (FAO), *State of the World's Forests 2011*, Rome (2011) at 81; A. White& A. Martin, *Who Owns the World's Forests? Forest Tenure and Public Forests in Transition*, Forest Trends and Center for International Environmental Law, Washington, D.C.(2002) at 7.

42 Food and Agriculture Organization (FAO), *supra* note 41, at 82.

43 E. Nkonya, J. Pender & E. Kato, *Who Knows Who Cares? Determinants of Enactment, Awareness and Compliance with Community Natural Resource Management Regulations in Uganda*, ENVIRONMENT AND DEVELOPMENT ECONOMICS 13(1), (2008) pp.79-109.

Figure 1: Institutional Preference for Land Allocation and Local Conflict Resolution in Mali.



Source: **Afrobarometer**, 2008.[44]

Additionally, Logan (2008) showed that 32% of communities consult traditional leaders while 26% consult local government officials for conflict resolution in Mali.[45]This raises important questions regarding the role of customary institutions in land management and conflict resolution. According to Cotula, et. al (2004), African states tended to replace the local customary institutions after independence.[46]This led to a clash of the post-colonial state institutions with the customary institutions.[47] Yet, due to the weaknesses of the formal institutions, the customary institutions have continued to play a vital role in land management as seen in many SSA countries.

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44 *Afrobarometer, Round 4: Summary Results of Mali 2008, available at http://afrobarometer.org/results/results-by-country-a-m/mali.*

45 C. Logan C., *Traditional Leaders in Modern Africa: Can Democracy and the Chief Co-Exist?* (2008), Working Paper No. 93, available at http://www.afrobarometer.org/index.php?option=com_docman&Itemid=39 at 10.

46 L. Cotula, C. Toulmin & C. Hesse, *Land Tenure and Administration in Africa: Lessons of Experience and Emerging Issues*, London: International Institute for Environment and Development (2004) at 2.

47 L .**Cotula, ed.**, **Changesin Customary Land Tenure Systems in Africa**, London: International Institute for Environment and Development (2007) at 5-6.

3. Institutions for Natural Resource Management and Conflict Resolution in Nigeria

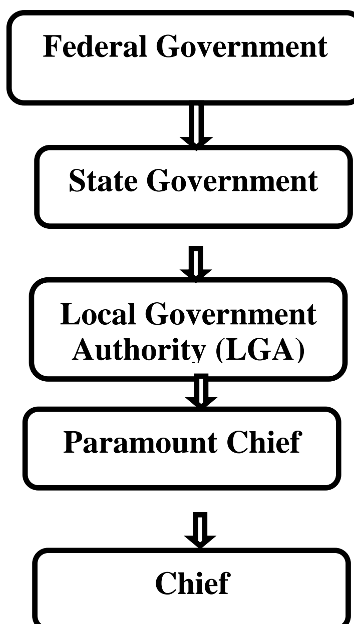
Nigeria has a Federal Government system comparable to the US system. The institutional landscape is highly decentralized and operates at three tiers of formal government and two or more tiers of customary institutions:

(i) The Federal Government. Federal government operates under 19 ministries. Of these, five ministries are involved in direct land management or that sustainable land management is critical: (a) agricultural and water resources, (b) environment, (c) science, (d) works and housing, and (e) solid minerals.

(ii) State Government. There are 36 states and one Federal Capital Territory (FCT) which does not have a state level status but operates institutions equivalent to those found in each state. Each state has ministries and departments matching the equivalent federal level institutions.

(iii) Local Government Authority (LGA). There are 774 LGA's which receive federal and state level transfers.

Figure 2: Institutional Landscape of Nigeria's Government



At the Federal level, the Ministry of Finance manages Federal Government funds. The National Assembly also participates in the management of Federal Government funds since it approves the budget after it is presented by the Ministry of Finance each year. The National Assembly also enacts laws. The state level institutional landscape is comparable to the Federal level ministries and departments. With the exception of some few ministries that can only be at Federal level (defense, foreign affairs, etc), each Federal ministry has an equivalent ministry at state level. The state house of assembly is equivalent to the national assembly and performs equivalent activities.

The LGA level institutions do not have an elaborate institutional landscape as the state but it has considerable independence in making decisions on how to spend money it receives from the Federal and State Governments. However, LGAs capacity to plan and execute programs is weak and that there is little accountability of LGA level spending.[48] Additionally, state governments spend a large share of funds allocated to LGA by the Federal government.[49] This reveals the weaknesses of the fiscal decentralization and calls for efforts to improve this critical institution.

Below the LGA, there are a number of villages which are administered by local chiefs. The paramount chief oversees a number of villages. The local chiefs play a large role in local governance in Nigeria. For example, the Land Rights Law, Cap. 24 Laws of Western Region, 1959 gives land trusteeship to local chiefs in many states.[50] As shown in Figure 2, the local chiefs are also given conflict resolution and other governance responsibilities below the LGA level, which is the lowest level of the formal local government structure.[51] It is this mandate, which was revoked in many SSA countries following independence. In one given LGA, a paramount chief has a mandate to govern several villages and below him, several chiefs

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48 T. Mogues, M. Morris, L. Freinkman, A. Adubi, & S. Ehui, *Agricultural Public Spending in Nigeria,* IFPRI Discussion Paper No. 789, Washington, D.C.: International Food Policy Research Institute (2008) at 29.

49 Ibid.

50 P.O. **Adeniyi**, *Improving Land Sector Governance in Nigeria - Implementation of the Land Governance Assessment Framework,* Abuja, World Bank (2011) at 42.

51 R. Birner, &A. Okumo, *Challenges of Land Governance in Nigeria: Insights from a Case Study in Ondo State,* Nigeria Strategy Support Program (NSSP), Working Paper No. 22 (2011) at 14.

– each serving one or few villages – serve the day to day administrative duties. The chiefdoms vary across ethnic groups.

Recent efforts to strengthen local institutions in Nigeria and many other African countries have led to decentralization efforts across Africa. According to Ndegwa (2002), Nigeria ranks third – after South Africa and Uganda – in the administrative decentralization in SSA.[52] The level of administrative decentralization was measured using an index - which ranges from 0-4, with 3-4 being high, 2-2.9 as moderate and 0-1.9 as low – is an average score of three indicators, namely clarity of roles for national and local governments as stipulated by the law, responsibility for service delivery and responsibility for hiring and firing local government staff.[53] Hence a country with high score of administrative decentralization has a clear administrative structure of sub-sidiarity, which delegates responsibility for service delivery to local governments.

Nigeria also ranks the second – after South Africa – in the fiscal decentralization - fiscal transfers from the central government to local governments and the degree of the local decision making on fiscal expenditure.[54]

The Federal Government of Nigeria Decree No. 23 of 1991 section 4; 221 provides executive powers to the Local Government Authority (LGA) to enact bylaws and edicts applicable to its area of jurisdiction. But such powers are limited since laws enacted by LGAs should be consistent with the state and Federal laws and statutes. Such provision is common to all local governments in SSA. However, they weaken the autonomy of local governments to enact and enforce some bylaws and regulations deemed important by the LGA.[55] Additionally, a wide gap exists between the LGA and local communities in Nigeria because LGAs are not elected by local people. As a result, most LGAs do not represent their local communities but instead they tend to represent themselves and politicians who selected them.[56]

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52 S.N.Ndegwa, *Decentralizationin Africa: A Stocktaking Survey*, African Regional Working Paper Series, No. 40, World Bank: Washington, D. C. (2002) at 4.

53 Ibid.

54 S.N. Ndegwa,, *supra* note 52, at 5.

55 D.O. Ademayo, *Local Government Autonomy in Nigeria: A Historical Perspective*, JOURNAL OF SOCIAL SCIENCES10(2), (2005) 77-87at 84.

56 Oviasuyi, P. O., *Model for Roles and Involvement of Local Communities in Development Projects and Programmes of Local Government Authorities in Nigeria,* JOURNAL OF HUMAN ECOLOGY31(2), (2010) pp. 103-109.

4. DATA

This study uses community-level data collected by a community-driven development (CDD) *Fadama* III project from August –November 2009. A total of 1110 communities participated in the study. The sample was drawn from all 37 state of Nigeria. A stratified random sampling was used to sample the 1110 communities. The 37 states served as the strata under which communities were randomly selected from a list of all communities in the state. Communities were asked to report how they collectively manage natural resources. They were also asked to report the laws and regulations enacted for natural resource management (NRM) and conflict resolution.

5. RESULTS

5.1. Natural Resource Conflicts and Parties Involved

Conflicts between crop producers and livestock keepers continue to be major parties in natural resource conflicts in Nigeria. This is a reflection of the difficulties which pastoralists experience due to their weak land tenure security. The geographical distribution of conflicts depicts the confluence of crop producers and livestock keepers. Livestock production is concentrated in the Sudan-Savanna zone in the northern zones and the livestock population decreases towards the humid forest zones in Southern Nigeria. The North-Central (NC) reported the largest number of conflicts. NC is located in the middle belt of Nigeria – a place with very active pastoral livelihoods and crop farming. The low frequency of conflicts in the North-East (NE) and South-East (SE) is largely due to the existence of one predominant livelihood. The livelihood in the NE – which is a dry area in the Sudan-Savanna zone – is largely livestock production while crop production is the predominant livelihood in the SE zone. The conflicts between sedentary crop producers and nomadic pastoral communities are common in Africa.[57] The conflicts arise due to the lack of tenure systems among nomadic communities who tend to move from one location to another in search of pasture and water. The pastoralists trespass crop fields

57 M.Moritz, *Changing Contexts and Dynamics of Farmer-Herder Conflicts Across West Africa*, CANADIAN JOURNAL OF AFRICAN STUDIES 40(1), (2006) pp. 1-40.

and this prompts conflicts with crop producers. Such conflicts are not common among communities with one predominant livelihood.

About 21% of communities enacted NRM bylaws and the South-West zone reported the highest share of bylaw enactment even though it has just moderate number of NRM conflicts. This suggests a weak link between number of conflicts and bylaw enactment. The weak relationship implies that enactment of bylaws was predominantly done for natural resource management and prevention of conflicts rather than for conflict resolution itself. Table 1 illustrates this as only 15% of the bylaws enacted were directly associated with conflict resolution and the rest were for NRM management and prevention of conflicts. For example, the bylaw on control of livestock movement is meant to prevent the most common conflicts between livestock keepers and crop farmers.

Fishing regulations bylaw was the most frequently enacted bylaw and it reflects the fishing activities in the rivers, floodplains (*fadamas*), ocean and lakes. Prevention of bush-burning was the fourth most important bylaw. As it will be illustrated below, this bylaw has important implications on NRM in communities, as it can help them to address the natural resource degradation, which in turn could lead to conflicts.

Figure 3: Parties Involved in Natural Resource Conflicts

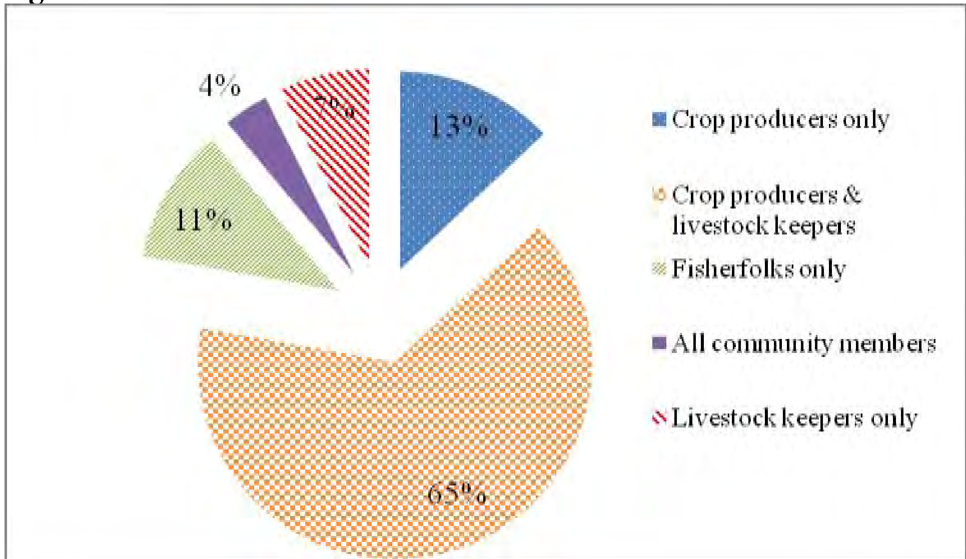
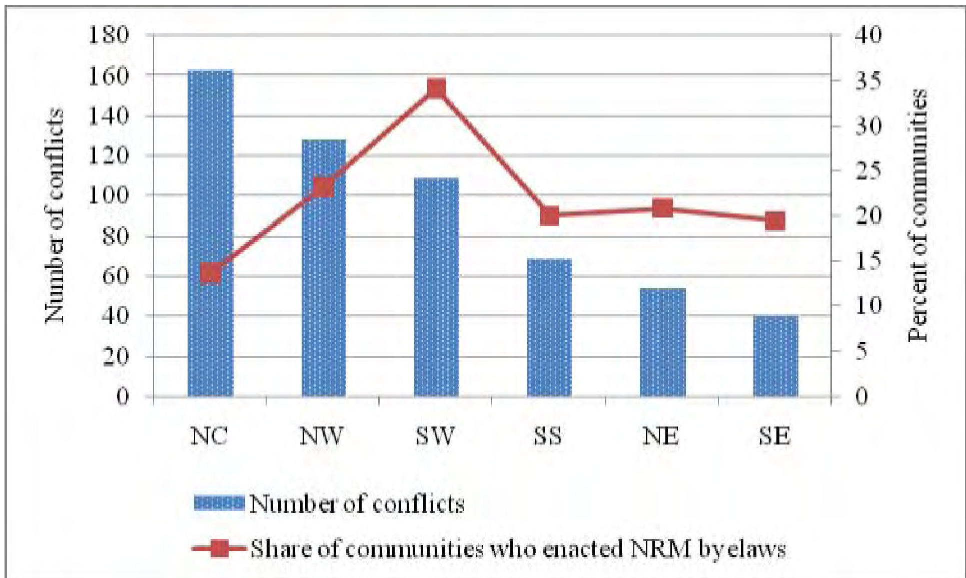


Figure 4: Number of Conflicts and Bylaws Enacted for NRM and Conflict Resolution



Notes: NC=North-Central; NW=North-West; SW=South-West; SS=South-South;
NE=North-East; SE=South-East.

Table 1: NRM Bylaws Enacted in Communities

Bylaw	% of communities who enacted bylaws (n=221)
Fishing regulations[a]	21
Control of Livestock Movement	16
Conflict resolution laws[b]	15
No bush burning	12
Land use zoning laws	11
Tree cutting & planting	8
Water use regulations	4
Other bylaws[c]	12

Notes:
[a] Includes: use of nets which won't catch small fish; no use of fish poison, etc.
[b] Includes: no farming on disputed lands; & community members must report disputes to authorities.
[c]These include non-NRM bylaws: no illegal assembly, no stealing, etc.

5.2. Case Study – Impact of Bylaws against Bush Burning in Emiginda Village, Northern Nigeria

This case study illustrates the effectiveness of the local institutions in NRM. The village of Emiginda in Niger state in north-central Nigeria faced a bush burning problem which cleared vegetation on a large area in the 1990's.[58] However, the communities passed a bylaw to address the ensuing shortage of pasture and forest products. Using satellite imagery data taken around the same period from 1990-2005, Nkonya et al (2011)[59] showed the changes of burnt area before and after the bylaw preventing bush burning in the Emiginda community. Using tiles (pixels) of 45 km by 30 km, satellite imagery showed that between 1990 and 2000, Emiginda village experienced an increase in "burn" area of 11,400 ha (Figure &

58 E.Nkonya, F. Place, J. Pender, M. Mwanjololo, A. Okhimamhe, E. Kato, S. Crespo, J. Ndjeunga, &S. Traore, *Climate Risk Management through Sustainable Land Management in Sub-Saharan Africa*, IFPRI Discussion Paper 01126 (2011) at 49.

59 Ibid.

Figure).Then, between 2000 and 2005, there was a 6,000 ha decrease in burnt area and a comparable decrease in shrublands with sparse trees. During the same period, agri-disturbed, shrubland, and even woodland recovered (Figure).

Figure 5:Emiginda 1990 Land Use Classification

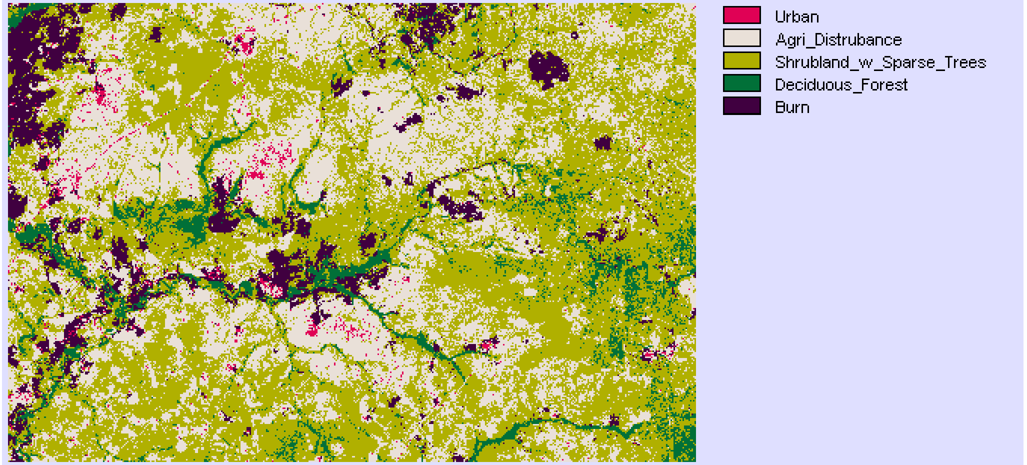
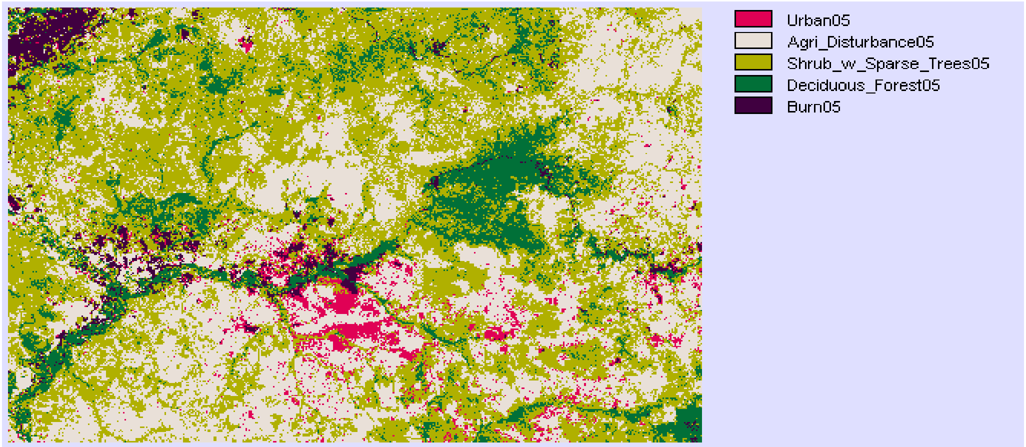


Figure 6:Emiginda 2000 Land Use Classification

Figure 7:Emiginda 2005Land Use Classification



Source: Nkonya et al., 2011.[60]

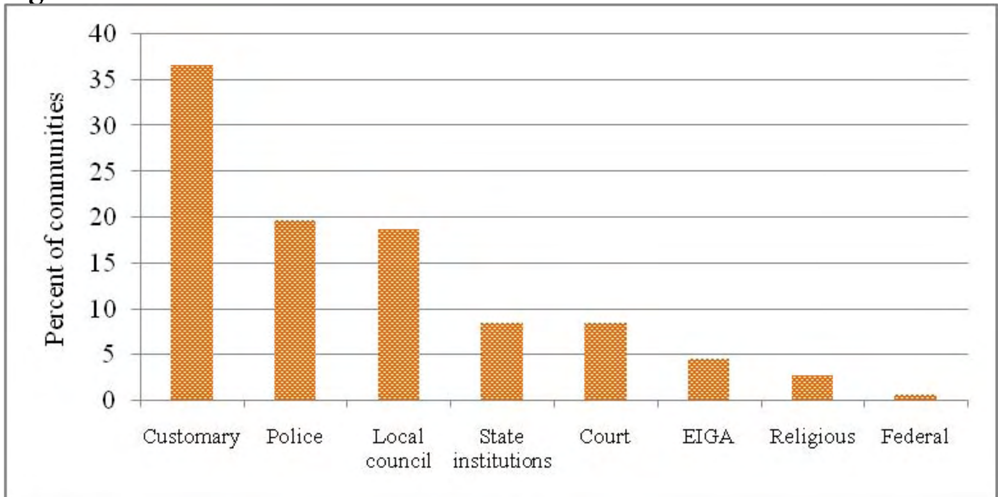
Group discussion with the Emiginda community revealed that a bylaw was passed in 2000 to address the shortage of natural resources, which resulted from the extensive bush burning in the 1990-2000 period.[61] The community also reported that it meted punishment for violators. The recovery of vegetation observed in 2000-2005 following enactment and effective enforcement of bylaw revealed the effectiveness of community level natural resource management experienced elsewhere.[62]

5.3. Institutions Used for Conflict Resolution

Consistent with Afrobarometer (2008)[63], customary institutions were most likely to be used for natural resource conflict resolution (**Error! Reference source not found.**), illustrating their importance and highlighting the need to seek ways of promoting them. The results are also consistent with Nigeria's institutional landscape. The local chiefs have mandate to administer justice in the communities.

60 Ibid
61 Ibid.
62 P. Blaikie, *supra* note 7; Heltberg R., *supra* note 7.
63 **Afrobarometer**, *supra* note 44.

Figure 8: Institutions Used to Resolve Natural Resource Conflicts



Source: *Fadama* III Community Survey Data, 2009.

In addition to the vertical linkage of customary institutions with the statutory institutions (Figure 2), the customary institutions are more effective than statutory institutions since their transaction costs are low, and they have more effective enforcement of laws – including social ostracism, short duration of case resolution – their punishments are immediate, and less corrupt than the statutory systems.[64] Additionally, local communities prefer to use customary institutions because of the use of familiar language and procedures.

6. CONCLUSIONS AND POLICY IMPLICATIONS

This study reveals that community level natural management (NRM) is effective and can reverse the severe land degradation in sub-Saharan Africa (SSA). However, the effectiveness of the community level NRM is dependent on the vertical linkage of the institutions. Nigeria is among the countries which have shown effective decentralization. Unlike many other countries in SSA, Nigeria has given mandate to customary institutions to provide conflict resolution and other local governance duties.

64 L.K. Nkonya, ‚*Rural Water Management in Africa: The Impact of Customary Institutions,* New York: Cambria Press(2008) at 245.

This has strengthened the vertical linkage and has led customary institutions to be the most common institution for conflict resolution.

However, the role of customary institutions has weaknesses of operating in communities with multiple ethnicities. For example, the most commonly reported conflict was between pastoralists – mainly the pastoral communities who move southward to crop farmers with different ethnic heritage. Conflict resolution between the pastoralists from northern ethnic groups and crop producers from central or southern ethnic groups is a challenge for chiefs – most likely from where the conflicts occurred (central and southern zones) – to provide a balanced judgment. This shows the need to strengthen the formal local institutions to provide the needed balanced conflict resolution. This suggests the need to strengthen further Nigeria's decentralization such that it is more responsiveness to people's needs and empowering communities to determine their development.

ADDRESSING INEQUALITY TRENDS IN CLIMATE CHANGE MITIGATION POLICY MEASURES AND PROJECTS: REFLECTIONS ON POST 2012 OUTLOOKS

Damilola S. Olawuyi[*]

ABSTRACT

As negotiators continue to map out post-2012 climate change regimes to replace the Kyoto Protocol, it is important to consider and reflect on some of the most controversial aspects of the Kyoto Protocol with a view of avoiding similar pitfalls in post-2012 regimes. One of the prominent criticisms against the design and implementation of the Kyoto protocol is its tendencies to foster inequalities and discriminations. Specifically, the clean development mechanism (CDM) of the Kyoto Protocol has been criticized for resulting in the deliberate targeting of poor communities as locations for projects. For example, there have been massive protests in Nigeria, Honduras and Panama all centered on imbalanced power relations, the concentration of projects in poor communities, massive land grabs and human rights repressions. There have also been concerns that women and vulnerable minority groups that could be affected by such projects are often excluded or marginalized from project decisions and from meetings when stakeholder comments and participation are provided for communities. This paper examines these discriminatory trends and proposes legal and institutional approach for addressing them in post-2012 frameworks. It examines how these imbalances in power relations foster the violations of international human rights principles and examines the nature of reforms required to transform these trends.

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1. INTRODUCTION

The Kyoto protocol is recognised as one of the most important global agreement of the late twentieth century, for fixing greenhouse gases (GHG) emission limits to be achieved by industrialized nations by 2012. The Kyoto protocol also stresses the need for countries to adopt policy measures and design emission reduction projects that foster climate change mitigation and adaptation. Apart from domestic measures and projects aimed at combating climate change, countries are also able to take part in the project-based mechanisms of the Kyoto protocol, which aim to deliver sustainable development and also assist in emission reductions.[1]

However, as innovative as the Kyoto protocol is, its implementation across national and international levels has been fraught with challenges.[2]One of the main concerns is the issue of deliberate targeting of

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1 The three flexible mechanisms: Joint Implementation (JI), Emission Trading (ET) and the Clean Development Mechanism (CDM) allow industrialized countries to meet their emission reduction targets by investing in projects abroad rather than through domestic actions alone. They give industrialized countries the opportunity to earn emission reduction credits *anywhere* in the world, at the *lowest cost* possible by investing in projects that lead to emission reduction and sustainable development. Studies confirm that it requires US $50 to mitigate one ton of CO_2 eq. in developed countries, while in developing countries the same reduction can be accomplished at US $15 per ton of CO_2 eq. For a detailed and excellent discussion of these mechanisms, see FARHANA YAMIN AND JOANNA DEPLEDGE, THE INTERNATIONAL CLIMATE CHANGE REGIME 25 (1st ed. 2004).

2 See See the Michaelowa and Lazarus exchange, in A Michaelowa and R Lazarus, *Arguing the Point: Should Large-Scale Power Projects Have a Future under the CDM?,* (2013) CARBON MECHANISMS REVIEW 14-15 (Michaelowa insists 'Do not throw out the child with the bathwater!' while Lazarus argues that 'maybe this kid has become too big for the bathtub!); see also B Mayer, *Judicial Review of Human Rights Impacts of Hydroelectric Projects,* CENTER FOR INTERNATIONAL SUSTAINABLE DEVELOPMENT LAW 2012; N Roht-Arriaza, *Human Rights in the Climate Change Regime,* (2010) 1(2) JOURNAL OF HUMAN RIGHTS AND THE ENVIRONMENT (where the author identifies areas where current climate change regimes may cause human rights violations in local communities. These include some projects under the Clean Development Mechanism, large hydropower and biomass projects., use of biofuels, choices on energy and adaptation, and REDD+ projects); K Umamaheswaran & A Michaelowa, *Additionality and Sustainable Development Issues Regarding CDM Projects in Energy Efficiency Sector* (2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=908824; UN Development Programme, *Fighting Climate Change: Human Solidarity in a Divided World* (2007), http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf; A MCMICHAEL ET AL., EDS., CLIMATE CHANGE AND HUMAN HEALTH – RISKS AND RESPONSES (1st ed. 2003); M Sandel, *It is Immoral to Buy the Right to Pollute,* N.Y. TIMES, Dec. 15, 1997; T Jackson, *The Language of Flexibility and the Flexibility of Language,* 10 INTERNATIONAL JOURNAL OF ENVIRONMENT AND POLLUTION 3 (1998); I Rowlands, *The Kyoto Protocol's Clean Development Mechanism: A Sustainability Assessment,* 22 THIRD WORLD QUARTERLY 795

poor communities as locations for projects. These communities are particularly vulnerable because they are perceived as weak and passive citizens who will not fight back against the poisoning of their neighbourhoods in fear that it may jeopardize jobs and economic survival. In Nigeria for example, there have been protests centred on the fact that large emission reduction projects have been cited in poor and disadvantaged communities where citizens do not have the means and resources to demand accountability or resist such projects.[3] Similarly, studies have shown that women and vulnerable minority groups that could be affected by climate change projects are often excluded or marginalized from project decisions and from meetings when stakeholder comments and participation are provided for.[4]

According to a 2011 Report of the United Nations, skewed power relations coupled with inequitable, cultural and social norms, often mean

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(2001); M Doelle, *From Hot Air to Action? Climate Change, Compliance and the Future of International Environmental Law* 29 (1st ed. 2005); *Climate Change and Human Rights: A Rough Guide* (2008), INTERNATIONAL COUNCIL ON HUMAN RIGHTS POLICY, http://www.ichrp.org/files/reports/45/136_report.pdf.

3 In Nigeria for example, six different emission reduction projects have been subjects of intense petition and court actions over their human rights violations. These projects include: the Kwale Project, Ovade Ogharefe project, the Lafarge Cement Project, The West African Gas Project (WAGP), the Asuokpu/Umutu Gas Recovery and Marketing Facility, and the Reducing Emissions from Deforestation and Degradation (REDD) currently being executed in Nigeria by Shell. The violations range from land grabs without compensation, assault on indigenes, killings, and lack of participation in decision-making process and the displacements of residents of affected areas. For these projects it is reported that the environmental impact assessment was only put together as a smokescreen and forwarded to the CDM Board after the Nigerian authorities had already approved the project. These projects were consequently approved and registered by the CDM Board despite the protests. See K Adeyemo, *Nigerians Oppose Climate Development Projects*, THE TRIBUNE, Sept. 12, 2010, at 3; David Fogarty and Sunanda Creagh, *REDD Under Fire in Nigeria* (Aug. 24, 2010), http://uk.oneworld.net/article/view/165950/1/246; Akanimo Sampson, *Don't Sell Forests: Group Urge Nigerian Government* (Aug. 27, 2010), http://www.scoop.co.nz/stories/WO1008/S00467/dont-sell-forests-groups-urge-nigerian-govts.htm; See Carbon Trade Watch, *Groups Slam Nigeria's Submission of Gas Flare Reductions for Carbon Credits* (2006), http://www.carbontradewatch.org/index.php?option=com_content&task=view&id=171&Itemid=36; Bank Information Center, *Local Groups say project will not end gas flaring, could exacerbate conflicts in the Niger Delta*, http://www.bicusa.org/en/Project.39.aspx.

4 Martha Hemmati, *Gender Perspectives on Climate Change: Emerging Issues Panel* (25 Feb.-7 Mar., 2008), COMMISSION ON THE STATUS OF WOMEN, http://www.un.org/womenwatch/daw/csw/csw52/panels/climatechangepanel/M.Hemmati%20Presentation%20Climate%20Change.pdf (hereinafter Hemmati); see also G Terry, *No Climate Justice Without Gender Justice: An Overview of the Issues*, 17(1) GENDER & DEVELOPMENT, 5-18 (2009) (hereinafter Terry); see also G TERRY, CLIMATE CHANGE AND GENDER JUSTICE 3 (1st ed. 2009) (hereinafter Terry II).

that the perspectives of women are neglected in the planning of mitigation and adaptation projects with only few programs designed for them to carry them along in the process and to ensure their active participation in adaptation.[5] The targeting of poor communities as locations for climate change mitigation and adaptation projects is a discriminatory practice that subjects the poor to greater harm due to their societal status.[6]

The approval of emission reduction schemes that foster discrimination, might amount to solving one problem by creating many others. It is therefore necessary to examine how existing human right frameworks can be mainstreamed into national and international efforts on climate change mitigation and adaptation. According to Filzmoser:

> Reported human rights abuses related to CDM project activities have caused widespread dismay that human rights are not being taken seriously under the CDM...The CDM Executive Board must take this issue seriously. If there are no rules in place that allow for the rejection of projects based on human rights abuses, it is time to change this now...Excluding carbon offset projects that fund human rights abuses from the CDM would only be a logical move given that responsible investors should not be interested in

5 According to the report, several societal dynamics contribute to this, they include: lack of access to formal education, poverty, discrimination in food distribution, food insecurity, limited access to resources, exclusion from policy and decision-making institutions and processes and other forms of social marginalisation. These dynamics put women at a distinct disadvantage. See *Women at the Frontline of Climate Change: Gender Risks and Hopes: A Rapid Response Assessment*, UNITED NATIONS ENVIRONMENT PROGRAMME, http://www.unep.org/pdf/rra_gender _screen.pdf. See also M Hemmati, *supra* note 4.

6 A good example of discrimination in environmental planning was the case of environmental racism, which was the subject of intense debates and litigations in the US in the late 1990s. It included the intentional siting of hazardous waste sites, landfills, incinerators, and polluting industries in communities inhabited mainly by African-American, Hispanics, Native Americans, Asians, migrant farm workers, and the working poor. For example the South Side of Chicago, which is predominantly African-American and Hispanic, has the greatest concentration of hazardous waste sites in the USA. See C Beasley, *Of Pollution and Poverty,* 2 (4) THE ENVIRONMENTAL JOURNAL 38-45 (1990); R BULLARD, CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS (1st ed. 1993) (hereinafter BULLARD); K Colquette at al., *Environmental Racism: The Causes, Consequences, and Commendations*, 5 (1) TULANE ENVIRONMENTAL LAW JOURNAL 153- 207 (1991) (herainfter Colquette).

> buying carbon credits from projects that violate UN conventions.[7]

Humphreys also notes that:

> it is necessary to examine what will be the consequences in human rights terms, of large forest conservation efforts, biofuel cultivation for export markets or nuclear power dependence, who will be affected and how?, are institutional forms of redress available in cases of rights violations.[8]

The United Nations Human Rights Commissioner seemed to sum these up when she noted recently that:

> Without explicit human rights safeguards, policies intended to advance environmental or development goals can have serious negative impacts on those rights. Thus, technocratic processes have excluded women from decision-making, economic and social inequalities have been exacerbated (and, with them, societal tensions), indigenous peoples have seen threats to their lands and livelihoods from some emission reduction schemes, scarce food-growing lands have sometimes been diverted for the production of biofuels, and massive infrastructure projects have resulted in the forced eviction and relocations of entire communities. Simply put, participatory, accountable, non-discriminatory and empowering development is more effective, more just, and, ultimately, more sustainable…Member States should commit to ensuring full coherence between efforts to advance the green economy, on the one hand, and their solemn human rights obligations on the other. They should recognize that all policies and measures adopted to advance sustainable development must be firmly grounded in, and respectful of, all internationally agreed human rights and fundamental freedoms, including

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7 A Filmozer, *CDM Projects Affect Human Rights* (Feb., 2011), http://www.cdm-watch.org/wordpress/wp-content/.

8 See S HUMPHREYS (ed.), HUMAN RIGHTS AND CLIMATE CHANGE 23 (1st ed. 2010). See also S LANKFORD, M DARROW AND L RAJAMANI, HUMAN RIGHTS AND CLIMATE CHANGE: A REVIEW OF THE INTERNATIONAL LEGAL DIMENSIONS 56-57 (1st ed. 2011) where the authors argued that policy measures designed to address climate change may impact the realization of human rights. They argued that human rights principles, both substantive and procedural would be relevant to the design and implementation of effective responses to climate change, particularly in relation to adaptation and to some extent also to mitigation.

> the right to development…States should resolve to work to advance a human rights-based approach to the green economy, based on the principles of participation, accountability (at the national and international levels), non-discrimination, empowerment, and the rule of law in green economy efforts, and to pursue a model of economic growth that is socially and environmentally sustainable, just and equitable, and respectful of all human rights.[9]

This paper examines how these imbalances in power relations foster the violations of international human rights principles. This paper is divided into four parts, part two discusses how projects in Panama and Honduras have led to human rights repressions, land grabs and displacement of poor and indigent citizens from their homes and lands, part three discusses how such discriminatory trends in climate change mitigation efforts are violations of the fundamental human rights against discrimination under international law.[10] Such practices also limit the credibility and integrity of the emission reduction schemes under the Kyoto protocol.[11] As such, projects that carry undoubted potentials for climate change mitigation and adaptation have been met with resistance, criticisms and protests due to their human rights downsides.[12] In part four, we discuss the nature of reforms required to transform these trends. As negotiators continue to discuss the future of climate change regimes post Kyoto, it is

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9 N Pillay, *Open Letter by the United Nations Human Rights Commissioner* (Mar. 30, 2012), http://www.ohchr.org/Documents/Issues/Development/OpenLetter HC.pdf; see also OHCHR, ***Pillay urges states to inject human rights into Rio+20*** **(Apr. 18, 2012), http://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx? NewsID=12070&LangID=E.**

10 See Terry, *supra* note 4; see also Terry II, *supra* note 4, at 3.

11 See L Pottinger, *The CDM's Hydro Hall of Shame, Bad Deal for the Planet: Why Carbon Offsets Aren't Working...And How to Create a Fair Global Climate Accord* (2008), http://gdrights.org/wp-content/uploads/2009/03/bad-deal-for-the-planet.pdf; SMcInerney-Lankford. *Climate Change and Human Rights: An Introduction to Legal Issues,* 33(2) HARVARD ENVIRONMENTAL LAW REVIEW 431-437 (2009); *Climate Wrongs and Human Rights: Putting People at the Heart of Climate-Change Policy* (2008), OXFAM, http://www.oxfam.org.uk/resources/policy/ climate_change/downloads/bp117_climatewrongs.pdf; see also C Aminzadeh, *A Moral Imperative: The Human Rights Implications of Climate Change,* 30 HASTINGS INTERNATIONAL AND COMPARATIVE LAW REVIEW 259 (2007); M Limon *Human Rights and Climate Change: Constructing a Case for Political Action,* 33 (2) HARVARD ENVIRONMENTAL LAW REVIEW 451 (2009).

12 *Issues: Flexibility Mechanisms,* DOWN TO EARTH, NOVEMBER 15, 2005 (2005).

pertinent to reflect on these inequalities that could further aggravate vulnerabilities to climate change.[13]

2. DISCRIMINATORY TRENDS IN CDM PROJECTS: CASE STUDIES/ EXAMPLES

2.1 THE AGUAN BIOGAS PROJECT IN HONDURAS

The Aguan project is undoubtedly one of the most controversial emission reduction projects that has recently dominated international discussions. This project, sponsored by the UK Government, is located in the Bajo Aguan region in Honduras. It is designed to reduce greenhouse gas emissions by collecting biogas from methane emissions and replacing fossil fuels utilized for heat generation in a mill of a palm oil plantation of Grupo Dinant's subsidiary Exportadora del Atlantico. Its emission reduction projections are large scale and monumental. Estimates suggest that it would reduce about 23,000 tonnes carbon dioxide annually, generating about US$ 2.8 million between February 2010 to January 2017.[14]

However, this project has been heavily criticized internationally for its gross human rights violations.[15] According to a report submitted to the Inter-American Commission on Human Rights, the local project developer Grupo Dinant is alleged to have been at the centre of violent conflicts with local people, mass displacements of people from their ancestral lands, violent repressions of protesters; and the killing of about 23 peasants.[16] A

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13 The Kyoto Protocol has an expiry date of 2012. At the 17th Conference of the Parties (COP) to the Framework Convention on Climate Change in Durban, South Africa held from November 28-December 9 2011, it was agreed that the Kyoto Protocol would be extended until 2017 to provide adequate time for the negotiation and drafting of a new climate change protocol and to agree on a common legal regime that would be ready for signing by 2015. The next COP would be held in Qatar from 26 November-7 December 2012. It is expected that new proposals would be explored and considered from the next COP.

11 *United Nations under Pressure to denounce Human Rights Abuses in Carbon Offsetting Scheme* (2011), FIAN (INTERNATIONAL HUMAN RIGHTS ORGANISATION FOR THE RIGHT TO FOOD) AND CDM WATCH, http://fian.satzweiss.com/news/press-releases/united-nations-under-pressure-to-denounce-human-rights-abuses-in-carbon-offsetting-scheme.

12 See BIOMASS Hub, *Human Rights Violations Linked to CDM Biogas Project in Honduras* (July, 2011), http://biomasshub.com/human-rights-violations-linked-cdm-biogas-honduras/.

16 For comprehensive details of human rights violations by this project, see *Petition to the CDM Executive Board on Aguan Gas project* (Feb., 2011), CARBON MARKET WATCH, http://www.cdm-watch.org/wordpress/wp-content/uploads/2011/02/ unsolicited_letter_cdmproject_application_3197_honduras.pdf (page not found); See also FIAN, *Human Rights Violation in Bajo Arguan* (Jul., 2011),

coalition of over seventy international human rights groups called on the UK to withdraw sponsorship for the project and for the CDM Executive Board not to approve or register the project.[17] Despite the petitions and protests, this project was approved by the Government of Honduras and subsequently registered by the CDM Executive Board on the 18th of July, 2011.[18] The CDM Board argued as in most cases that it has no mandate to investigate human rights abuses and that any matters related to the sustainable development of the project or human rights is determined by the government that hosts the project.[19]

The approval of this project by the CDM Executive Board in the face of the human rights issues such as repressive land grabs without compensation, mass murder of peasants and land owners and the environmental pollution brought about by the project (to mention but a few), raise fundamental questions on the need for a mechanism through which the CDM Executive Board and the respective National Authorities (NA) are empowered to consider the human rights consequences of a project in granting or withholding project approval and secondly to screen out projects which violate human rights.

Approving such projects diminishes the gains that have been made under international human rights law. Such approvals also go against the preventive and precautionary principles of international environmental law, which advocates the need to prevent and avoid policies, or projects that

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http://www.fian.org/resources/documents/others/honduras-human-rights-violations-in-bajo-aguan/pdf.

17 CDM Watch, *Open Letter: UK Government Must Withdraw Authorisation for Aguan and Lean CDM Projects Linked to Assassinations and Other Human Rights Abuses in Honduras* (2011), http://carbonmarketwatch.org/open-letter-uk-government-must-withdraw-authorisation-for-aguan-and-lean-cdm-projects-linked-to-assassinations-and-other-human-rights-abuses-in-honduras/. As a response to protests by several international human rights groups German public development bank DEG (Deutsche Entwicklungsgesellschaft) declared that it will not pay out an already approved loan of $20 million USD for the project. Similarly, EDF Trading, a wholly-owned subsidiary of Electricité de France SA's and one of the biggest CDM investors, pulled out from a contract to buy carbon credits from the project. See Mathew Carr, *German Bank Won't Lend to Honduran CO_2 Project* (Apr., 2011), http://www.bloomberg.com/news/2011-04-18/german-bank-won-t-lend-to-honduran-co2-project-cdm-watch-says.html; For the official response of the UK Government, *see Letter by Rt. Hon Chris Huhne M.P* (Apr., 2011), http://www.cdm-watch.org/wordpress/wp-content/uploads/2011/02/UK_Gov_reponse_on_aguan_130411.pdf.

18 See *Lists of Registered CDM Projects* (2011), UNFCCC, http://cdm.unfccc.int/Projects/DB/TUEV-SUED1260202521.42/view.

19 See *Human Rights in the CDM*, CARBON WATCH http://carbonmarketwatch.org /category/sustainable-development/human-rights/.

could produce short and long term environmental consequences.[20] Prevention strengthens the respect of human rights by blocking the approval of such projects in the first place.

2.2 THE CHANGUINOLA HYDROELECTRIC DAM PROJECT IN PANAMA

The Changuinola (Chan 75) hydro dam project in Panama is another project that has been criticized as violating several human rights of the Ngöbe indigenous people.[21]In May 2007, the Government of Panama approved a 20-year concession of 6,215 hectares in the *Palo Seco protected forest* to AES-Changuinola, which provided authority for the construction of the Chan-75 hydroelectric dam. The 223MW power station was conceived to reduce the high cost of energy in Panama, to generate cleaner energy and to foster a reduced dependence on fossil fuels in power generation in Panama.[22]

Despite its clean energy prospects, this project has been massively criticized by the people of Panama, and is currently subject to numerous on-going court cases. The United Nations Special Rapporteur on human rights and indigenous people has also heavily criticized the project.[23] Some of the human rights violations experienced by the indigenous people

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20 R Andorno, *The Precautionary Principle: A New Legal Standard for a Technological Age,* 1 JOURNAL OF INTERNATIONAL BIOTECHNOLOGY LAW 11–19 (2004).

21 The Ngöbe, who number about 170,000 people, are the largest indigenous group in Panama with a vast majority still living in their traditional lands in Western Panama. See International Rivers, *CIEL Comments on the Chan 75 Large Hydropower Project'* (2008), http://www.internationalrivers.org/global-warming/the-cdm-kyotos-carbon-offsetting-scheme/ciel-comments-changuinola-1-chan-75-large-hyd; see Petition on Human Rights violations by the Government of Panama against the Ngöbe indigenous communities and individuals in the Changuinola River Valley, Bocas del Toro, Panama, p. 32-33 (28 Mar. 2008), Inter-American Commission on Human Right (IACHR), REPORT No. 75/09, PETITION 286-08 (hereinafter Petition).

22 The project aims to increase the country's capacity by 15% and energy production by 18%. The current installed capacity of the country is 1,534MW and the annual production is 6,000GWh. Once operational, the project will supply 1,040GWh annually to industrial and residential areas in Panama. Overall, about 90 hydroelectric projects are proposed at a cost of around $1bn. See *75 Hydroelectric Facility,* http://www.power-technology.com/projects/changuinola75/.

23 The rapporteur noted 'a significant impact on the indigenous communities in the surrounding area' and concluded that none of the communities were adequately consulted nor had the opportunity to give their consent in relation to relocation. See *Chan-75 Dam,* 2009 *Report of the Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous Peoples,* Sept. 7, 2009, A/HRC/12/34/Add.5. See also *UN Criticizes displacements of Panama Dam Tribe* (2008), http://www.terradaily.com/reports/UN_criticises_displacement_of_Panama _dam_tribe_999 .

include human rights repression against poor citizens and peasants, arbitrary displacements from homes and farms, loss of housing and destruction of crops, as well as the excessive use of force and detention of opponents of the project. According to a petition filed in 2008 with the Inter American Human Rights Commission, the project will displace residents of four Ngöbe villages – Charco la Pava, Valle del Rey, Guayabál, and ChanguinolaArriba – that are home to approximately 1,005 people who have now been displaced. Another 4,000 Ngöbe living in neighbouring villages, will also be negatively affected because the dam will destroy their transportation routes, harm their agricultural plots, cut off their access to their farmlands, or open up their territories to non-Ngöbe settlers.[24]

The environmental side effects of the dam project have also been highlighted. Already, the project has led to excessive flooding, death of plants and a rapid destruction of the vegetation of one of the world's most notable diversity hotspots.[25] According to the Red Cross, over 25,000 people have been forced to abandon their farmlands, the majority of them being indigenous peoples.[26] Flooding is also expected to kill and decrease wildlife in the affected areas.[27]

There have also been assaults, arbitrary detention, public humiliation, threats and illegal destruction of crops and homes at the hands of the Panama police and AES. According to the Petition, about fifty-four protesters have been arrested including 13 minors (two of whom were infants.) The police allegedly broke the nose of a nine-year-old and injured the arm of a twelve-year-old during an anti-Chan-75 protest.[28]

Human rights groups have also highlighted the lack of a participatory process or a prior informed consent of the traditional people by the Government or the project proponents – the AES. According to the petition, the AES forcefully acquired family lands without consulting with the representatives of the community:

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24 See Petition, *supra* note 21, at 5.

25 See Petition, *supra* note 21, at 5.

26 *Panama Dam Flooding threatens Indigenous Families* (May 26, 2011), AMNESTY INTERNATIONAL, http://www.unhcr.org/refworld/docid/4ddf3cd32.html; *Desperate Need in Flood hit Panama* (Jan. 5, 2011), http://www.shelterbox.org/ news.php?id=564.

27 J Stein, *Resistance to Dam Nation: An Analysis of the Stance and Strategies of the Opposition Movement to the Chan-75 Hydroelectric Project in Bocas del Toro, Panama* (2008), http://wesscholar.wesleyan.edu/etd_hon_theses/173/ (hereinafter Stein).

28 *Id.*, at 7-8.

> …Since at least May 2006, AES-Changuinola has sought to acquire Ngöbe landholdings on a family-by-family basis without heeding traditional Ngöbe land tenure practices. Using the prospect of large sums of money and the threat of forced evictions, AES-Changuinola has lured heads of families, many of whom do not speak Spanish or are illiterate into signing documents that purportedly give rights to AES-Changuinola …Many people who signed such documents are either illiterate in Spanish or speak only Ngöbére. Many of these had one impression about what they were agreeing to when they signed and only later discovered that AES-Changuinola interpreted those documents to mean that the company had the right to destroy their landholdings for the purpose of dam construction. Many Ngöbe who initially refused to sign contracts with AES were harassed or bullied by the company and state and local government officials into doing so.[29]

The absence of a participatory process through which some of the issues of displacements, relocation and compensation could have been discussed and agreed upon further highlights the lack of transparency and accountability in the planning and execution of this project. Not only does it diminish the emission reduction gains of the project, it fosters discrimination against the indigenous communities of Ngobe whose rights have been affected by this project.[30] The manner of approval and execution for this project and the attendant negative publicity it has generated further underscore the importance of integrating human rights norms into the planning and implementation of climate change projects.[31]

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29 Stein, *supra* note 27, at 6.

30 J Barber, *Paradigms and Perceptions: A Chronology and Analysis of the Events of the Chan-75 Hydroelectric Project and the Roles and Relationships of Participants* (2008), http://digitalcollections.sit.edu/isp_collection/5/.

31 These same concerns have been expressed with the Barro Blanco CDM Project, a project registered by the CDM Executive Board on 26th January 2011. The Barro Blanco project has been criticised as violating several human rights of the Ngöbe indigenous people of Panama. This project is a 28.84 MW hydroelectric power project in the district of Tole, within the Chiriqui province in Panama. According to a submission filed on March 25, 2013 with the CDM Executive Board, some of the human rights violations experienced by the indigenous people include arbitrary displacements from homes and farms, loss of housing and destruction of crops, as well as the excessive use of force and detention of opponents of the project. It is projected that the project will displace residents of four Ngöbe villages – Culantro, Cascabel,

3. NON-DISCRIMINATION, EQUALITY AND PRIORITIZATION OF VULNERABLE GROUPS UNDER INTERNATIONAL LAW

The human rights principle of equality and non-discrimination is one of the most recognised rights under international law.[32] International law de-emphasizes any distinction, exclusion, restriction or preference which is based on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status, and which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise by all persons, on an equal footing, of all rights and freedoms.[33] For example, the UN Charter provides that the aim of the UN is to 'develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples...and to promote and encourage respect for human rights and fundamental freedoms for all without distinction as to race, sex, language or religion'[34]

Though not legally binding, Article 1 of the Universal Declaration of Human Rights (UDHR) specifically stipulates that '*All* human beings are born free and equal in dignity and rights'. Article 2 notes that '*everyone* is entitled to all the rights and freedoms set forth in the Universal Declaration

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Mununi, Piedra Roja, and Rio Luis – that are home to approximately 1,005 people. Another 4,000 Ngöbe living in neighbouring villages, will also be negatively affected because the dam will destroy their transportation routes, harm their agricultural plots, cut off their access to their farmlands, or open up their territories to non-Ngöbe settlers. See *Submission Regarding Human Rights to the CDM* (25 Mar., 2013), http://www.internationalrivers.org/resources/submission-regarding-human-rights-to-the-cdm-7899; see also, *Letter to the CDM Executive Board Regarding the Barro Blanco Hydroelectric Project* (9 Feb., 2011), INTERNATIONAL RIVERS; *Baro Blanco Hydropower Project in Panama Violates CDM Rules* (2011), CARBON MARKET WATCH, http://carbonmarketwatch.org/ barro-blanco-hydropower-project-in-panama-violates-cdm-rules-newsletter-12/; see also *Protests over planned dam turn violent in Panama* (9 Mar., 2013), AGENCE FRANCE-PRESSE; John Scherton, *Nagare Barro Blanco* (17 Mar., 2013), INTERCONTINENTAL CRY, http://intercontinentalcry.org/nagare-barro-blanco/; Richard Arghiris, *Panama: Police Brutality signals impending storm over Barro Blanco hydroelectric project* (March 21, 2013), INTERCONTINENTAL CRY, http://intercontinentalcry.org/panama-police-brutality-signals-impending-storm-over-barro-blanco-hydroelectric-project/.

32 See W MCKEAN, EQUALITY AND DISCRIMINATION UNDER INTERNATIONAL LAW 59 (1st ed. 1983).

33 The United Nations Human Rights Committee, General Comment No. 18: Non-discrimination : 11/10/1989, CCPR General Comment No. 18.. available at http://www.unhchr.ch/tbs/doc.nsf/(Symbol)/3888b0541f8501c9c12563ed004b8d0e?Opendocument.

34 Charter of the United Nations, art. 1(2), Jun. 26, 1945, 1 UNTS XVI.

without distinction of *any kind*, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status'. Article 4 provides that '*No one* shall be held in slavery or servitude' while Article 7 declares unequivocally that '*All* are equal before the law and are entitled without any discrimination to equal protection of the law'.[35]

The most elaborate clause on non-discrimination is found in Article 26 of the ICCPR which provides that:

> ...all persons are equal before the law and are entitled without any discrimination to equal protection of the law. In this respect, the law shall prohibit discrimination and guarantee to all persons equal and effective protection against discrimination on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.[36]

The Article 2(3) and 3 of the ICESCR also contains similar provisions on non-discrimination.[37]

The UN Sub-commission on the Prevention of Discrimination and Protection of Human Rights,[38] described prevention of discrimination as the prevention of any action which denies to individuals or groups of people the equality of treatment which they may wish. Article 1 of the Convention on the Elimination of Racial Discrimination (CERD) defines discrimination as any distinction, exclusion, restriction or preference based on race, colour, descent or national or ethnic origin which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise, on the equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life.[39]

Article 7 of the Convention on the Elimination of All forms of Discrimination against Women (CEDAW) also provides for the

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35 Universal Declaration on Human and Peoples Rights, Dec. 10, 1948, 217 A (III).

36 International Covenant on Civil and Political Rights, Dec. 16, 1966, 999 UNTS 171 (hereinafter ICCPR).

37 International Covenant on Economic Social and Cultural Right, Dec. 16, 1966, 993 UNTS 3.

38 This commission was created by the UN to specifically address the issues of equality and non-discrimination. See A Bayefsky, *The Principle of Equality or Non-discrimination in International Law*, 11 HUMAN RIGHTS QUARTERLY 5 (1990).

39 Convention on the Elimination of All Forms of Racial Dicrimination, Dec. 21, 1965, 660 UNTS 195 (herainafter CERD).

elimination of discrimination against women in political and public life.[40] Article 5 encourages States to take measures to eliminate prejudices and stereotyping against women. Though not legally binding, the *UN Commentary on the Norms and Responsibilities of Transnational Corporations and other Businesses with Regard to Human Rights* also provides that:

> Transnational corporations and other business enterprises shall ensure equality of opportunity and treatment, as provided in the relevant international instruments and national legislation as well as international human rights law, for the purpose of eliminating discrimination based on race, colour, sex, language, religion, political opinion, national or social origin, social status, indigenous status, disability, age - except for children, who may be given greater protection - or other status of the individual unrelated to the inherent requirements to perform the job or of complying with special measures designed to overcome past discrimination against certain groups.[41]

The commentary in para 2(c) specifically notes that 'Particular attention should be devoted to the consequences of business activities that may affect the rights of women'.[42] It also provides that transnational corporations and other business enterprises shall ensure that the burden of negative environmental consequences shall not fall on vulnerable racial, ethnic and socio-economic groups.[43] The Conference of Parties to the United Nations Framework Convention on Climate Change (COP15) in the Cancun Agreement also recognizes that gender equality and the

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40 See Optional Protocol to the Convention on the Elimination of Discrimination Against Women, Oct. 6, 1999, 2131 UNTS 83.

41 **Norms on the Responsibilities of Transnational Corporations and Other Business Enterprises with Regard to Human Rights, Art. 2(c), 2003, U.N. Doc. E/CN.4/Sub.2/2003/38/Rev.2 (hereinafter Commentary)**; Respect for human rights during business activities has also been re-emphasised in the more recent Ruggie Framework, see J Ruggie, *United Nations Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework* (21 March 2011), UN Document A/HRC/17/31, ¶¶8-12 (hereinafter J Ruggie).

42 *Id.*

43 Commentary, *supra* note 41, at ¶14 (c).

effective participation of women and indigenous peoples are important for effective action on all aspects of climate change.[44]

To protect and fulfill the non-discrimination norm of the international human rights law, it is imperative that the concentration of harmful developmental projects in poor communities is discouraged at the level of policy making. It is also apposite that States create the enabling environment for the increased participation of women in decision and policy-making in local, community, national, regional and international institutions, processes, negotiations and policies related to climate change issues. According to UNEP,

> Adaptation programmes should have long-term goals of increasing gender and social security needs, safety needs and active participation of women in governance at every level through participatory policies and targets, capacity strengthening, development of leadership and technical skills, and clear recognition and support of their rights, agency and knowledge.[45]

It has also been identified as a fundamental element of a right based approach to development (HRBA). The HRBA advocates the institutionalization of human rights into project planning and decision making.[46] Through the HRBA, human rights principles such as equality and non-discrimination are harmonized and integrated into legislations,

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44 *Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention*, http://unfccc.int/files/meetings/cop_16/ application/pdf/cop16_lca.pdf.

45 UNEP, WOMEN AT THE FRONTLINE OF CLIMATE CHANGE: GENDER RISKS AND HOPES. A RAPID RESPONSE ASSESSMENT 8 (1st ed. 2011).

46 According to the United Nations, Other elements of good programming practices that are also essential under a HRBA include:
i) People are recognized as key actors in their own development, rather than passive recipients of commodities and services; (ii) Participation is both a means and a goal; iii) Strategies are empowering, not disempowering; iv) Both outcomes and processes are monitored and evaluated; v) analysis includes all stakeholders; vi) Programmes focus on marginalized, disadvantaged, and excluded groups; vii)The development process is locally owned; viii) Programmes aim to reduce disparity; ix) Both top-down and bottom-up approaches are used in synergy; x) situation analysis is used to identity immediate, underlying, and basic causes of development problems; xi) Measurable goals and targets are important in programming; xii) strategic partnerships are developed and sustained; xiii) programmes support accountability to all stakeholders. See *The Human Rights Based Approach to Development Cooperation towards a Common Understanding among UN Agencies* (2003), THE UNITED NATIONS, http://www.undg.org/archive_docs/6959-The_Human_ Rights_Based_Approach_to_Development_Cooperation_Towards_a_Common_Understandin g_among_UN.pdf (hereinafter Report on Human Rights Based Approach).

policies and project activities, thereby giving citizens a basis to demand for enforcement. The HRBA represents a shift from a need based approach to an approach that requires governments and planning agencies to consider the impacts of a particular project on the enjoyment of existing human rights. The HRBA integrates the norms, standards and principles of the international human rights system into plans, policies and processes.[47] According to the UN, the following elements are necessary, specific, and unique to a human rights based approach:

a) Assessment and analysis of the human rights claims of rights-holders and the corresponding human rights obligations of duty-bearers as well as the immediate, underlying, and structural causes of the non-realization of rights;

b) Programmes assess the capacity of rights-holders to claim their rights and of duty-bearers to fulfill their obligations. They then develop strategies to build these capacities;

c) Programmes monitor and evaluate both outcomes and processes guided by human rights standards and principles;

d) Programming is informed by the recommendations of international human rights bodies and mechanisms.[48]

The HRBA thus underscores the need for the equal treatment of people in planning. It rejects policies that marginalise people based on income, sex, ethnicity or race, age or nationality. According to the common understanding on HRBA, all individuals are equal as human beings and by virtue of the inherent dignity of each person. All human beings are therefore entitled to their human rights without discrimination of any kind, such as race, colour, sex, ethnicity, age, language, religion, political or other opinion, national or social origin, disability, property, birth or other status as explained by the human rights treaty bodies.[49] This element of the HRBA, if applied to climate change projects, would make it impossible for project proponents to deliberately situate projects in poor and marginalised communities.

3.1 ELEMENTS OF EQUALITY AND NON-DISCRIMINATION

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47 A CHERIA AND E SRIPRAPHA PETCHARAMESREE, A HUMAN RIGHTS APPROACH TO DEVELOPMENT: RESOURCE BOOK 2-4 (1st ed. 2004).

48 Report on Human Rights Based Approach, *supra* note 46.

49 Report on Human Rights Based Approach, *supra* note 46.

In this part, we analyse the normative contents of the fundamental right to equality and non-discrimination. They include: equality of opportunity and treatment, burden sharing and vulnerability proofing.

3.1.1 Equality of Opportunity and Treatment

In fulfillment of the non-discrimination norm of the international human rights law, states are under a duty to ensure that marginalized groups, particularly women and youths, have equal rights to participate effectively in public life and that no decisions directly affecting their rights and interests are taken without their 'informed consent'.[50] This is by ensuring the inclusion of all relevant stakeholders including the vulnerable members of the society in decision making and by providing equal opportunities to them to oppose or support a policy or project. Inclusivity focuses on the need to provide a fair opportunity for stakeholders and representatives of diverse societal groups or interests to attend decision making meetings. Inclusivity abhors discriminatory policies or policies that exclude vulnerable members of the society. As the *UN Commentary on the Norms and Responsibilities of Transnational Corporations and other Businesses with Regard to Human Rights* notes:

> Transnational corporations and other business enterprises shall ensure equality of opportunity and treatment, as provided in the relevant international instruments and national legislation as well as international human rights law, for the purpose of eliminating discrimination based on race, colour, sex, language, religion, political opinion, national or social origin, social status, indigenous status, disability, age - except for children, who may be given greater protection - or other status of the individual unrelated to the inherent requirements to perform the job or of complying with special measures designed to overcome past discrimination against certain groups.[51]

Equality of opportunity entails the idea of inclusivity which speaks to the need to provide fair and equal access to every member of the society in the decision making process irrespective of status. Inclusivity includes the notion of fairness, which emphasises the need to provide means for

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50 Report on Human Rights Based Approach, *supra* note 46, at ¶4(d).

51 Commentary, *supra* note 41, at ¶2(c); J Ruggie, *supra* note 41, ¶¶1-3.

marginalized and vulnerable stakeholders to take part in decision making. They should be given fair access to attend decision-making meetings, to express their thoughts and to participate in the final decision-making. Inclusion requires the pulling down of all sort of artificial barriers to participation. It would also reduce any advantage due to class or race that allows some individuals to influence the outcome of a deliberative process. This would require the government to assist in bridging these gaps and in creating a level playing ground. Either by choosing accessible venues for meetings or scheduling meeting in different areas of the community that are close to main centres, providing free transportation, hiring language interpreters for locals, and by reducing technicalities in discussions. It will include leveraging new technological medium to provide opportunities for online participation through webinars, online surveys and questionnaires.[52]

3.1.2 Burden Sharing

This element speaks to the need to avoid governmental decisions or projects that tend to imperil the life, safety and health of a section of the society. No person or group should suffer more societal harm from the project as a result of status or gender. For example, the concentration of harmful developmental projects in poor communities. The targeting of poor communities as locations for climate change mitigation and adaptation projects is a discriminatory practice as it subjects the poor to greater harm due to their societal status.[53]What the HRBA seeks to do is to ensure that the burden of a climate change project are spread across every segment of the society and shared equally.

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52 For detailed discussions on the value of e-rulemaking, see S Novek, *Electronic Revolution in Rule Making*, 53 EMORY L. J 434 (2004); see also C Coglianese, *Citizen Participation in rule Making: Past, Present and Future*, 55 DUKE L.J 943 (2006); A FUNG AND EOLIN WRIGHTS (EDS) DEEPENING DEMOCRACY: INSTITUTIONAL INNOVATIONS IN EMPOWERED PARTICIPATORY GOVERNANCE (1st ed. 2003).

53 A good example of discrimination in environmental planning was the alleged and highly litigated incidents of environmental racism in the US in the late 1990s. It included the intentional sitting of hazardous waste sites, landfills, incinerators, and polluting industries in communities inhabited mainly by African-American, Hispanics, Native Americans, Asians, migrant farm workers, and the working poor. For example the largest hazardous waste landfill in the United States is located in Emelle, Alabama, a poor, predominantly African-American community. It receives toxic materials from forty-five states and several foreign countries, also the South Side of Chicago, which is predominantly African-American and Hispanic, has the greatest concentration of hazardous waste sites in the nation. See C Beasley, *Of Pollution and Poverty*, 2 (4) THE ENVIRONMENTAL JOURNAL 38-45 (1990); Bullard, *supra* note 6; Colquette, *supra* note 6.

As such Not- in- My- Backyard (NIMBY) syndrome must be eradicated from decision-making.[54] The *UN Commentary on the Norms and Responsibilities of Transnational Corporations and other Businesses with Regard to Human Rights* specifically notes that 'transnational corporations and other business enterprises shall ensure that the burden of negative environmental consequences shall not fall on vulnerable racial, ethnic and socio-economic groups.[55] Para. 2(c) also stipulates that 'Particular attention should be devoted to the consequences of business activities that may affect the rights of women'.[56]

Implementing non-discriminatory policies would include laying down clear criteria for selecting project locations, conducting environmental impact assessment on the effects of a project at that location and providing public information on the outcome of the assessment. This is in line with the international environmental law principle of prevention which enjoins a state to exercise due diligence by developing anticipatory policies which regulate activities within its jurisdiction that are harmful to any part of the environment.[57] If the EIA shows that the inhabitants of the specific location would be affected by that project, then the project should be discontinued irrespective of the amount of emission reduction the project would generate.

3.1.3 Data Segregation and Vulnerability Proofing

To prevent policies that discriminate based on status or gender, there is the need to establish and maintain an effective database for assessing risks on the basis of income, gender roles, and the constraints operating

54 NIMBY or Nimbyism is a term coined and made popular to describe the injustices of the early 1980s in the United States where poor and black neighbourhoods were selected for toxic and dangerous wastes and projects. Opposing residents are sometimes called Nimbies. See R BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY (3rd ed. 2002). According to Bullard because low-income and minority communities in the US have had few advocates and lobbyists at the national level, social equity and distributive impacts of pollution have not been met hence the disproportionate amount of pollution and other environmental stressors in black neighbourhoods in the South.

55 Commentary, *supra* note 41, ¶14(3); J Ruggie, *supra* note 41, ¶¶1-3.

56 Commentary, *supra* note 41.

57 See Espoo Convention on Environmental Impact Assessment in a Transboundary Context, art. 2(1), Feb. 25, 1991, 1989 UNTS 309 (hereinafter Espoo Convention). See also United Nations Convention on the Law of the Sea, art. 206, Dec. 10, 1982, 1833 UNTS 397 (hereinafter UNCLOS).

against their participation in decision-making processes.[58] According to the *UN Statement of Common Understanding*, policy makers can address the issue of non-discrimination by ensuring that official data is disaggregated, by religion, ethnicity, language, sex, migrant status, age and any other category of human rights concerns discussed above. Policy makers would also incorporate proofing as part of the wider human rights – proofing of all programming. Gender and income-proofing will help to assess the implications for low income people and women of any planned action, the representation afforded to such categories in decision making and ways to protect the interests of the marginalized through policies, legislation and programmes.

International climate change regimes could include provisions which make it compulsory for project proponents to demonstrate that a particular section of the society is not disadvantaged by a project before such project could be approved. This would be achieved by developing concrete risk assessment procedures to ensure better characterization of risk across populations, communities, or geographic areas. Measures would then be put in place to reduce high concentrations of risk among specific population groups. When making project decisions, project proponents would be required to demonstrate the distribution of projected risk.

4. THE NEED TO REDEFINE VULNERABILITY IN POST 2012 REGIMES: RECOMMENDATIONS

As shown here, most of the direct and indirect effects of climate change on human rights are often exacerbated by inherent societal and non-climatic factors such as discrimination, unequal power relationships, lack of transparency and accountability by governments, lack of adequate data and government secrecy, lack of access to formal education, poverty, social marginalisation, exclusion from policy and decision-making institutions and processes and the lack of deliberative democracy. These are problems that are entrenched in the political norms of different countries with

58 *See* F Francioni, *Access to Justice, Denial of Justice and International Investment Law*, 20 EJIL 729 (2009) (hereinafter Francioni); Cappelletti & Garth (eds), Access to Justice: The Worldwide Movement to Make Rights Effective; J PAULSSON, DENIAL OF JUSTICE IN INTERNATIONAL LAW 134 (1st ed. 2005); L Curran, M Anne Noone, *Access to Justice: A New Approach using Human Rights Standards,* 15 (3) INTERNATIONAL JOURNAL OF THE LEGAL PROFESSION 195 – 229 (2008) (herainfter Curran and Noone).

varying intensities that make the impacts of climate change on human rights more pronounced in some jurisdictions more than the other.[59] Unfortunately, these problems are more pronounced in less democratic states that are also considered as the most vulnerable to the overall impacts of climate change. For example, in some societies women are not allowed to take part in important town hall meetings where decisions on projects or policies are taken. A UN study has shown that this discriminatory practice alone doubles the vulnerabilities of women to the direct and indirect impacts of climate change.[60]

Similarly, some countries, poor neighbourhoods are targeted as potential locations toxic projects; this worsens the already poor standard of living in these communities making them even more vulnerable to the impacts of climate change. This target selection and concentration of projects in poor communities would have to be resolved in future climate regimes. There is a need for right based reform of current procedures for approving projects to guarantee that projects are fairly located and that the risks of climate change adaptation are equally shared amongst the community. A right based climate change regime would ensure the vulnerabilities of the poor and minorities are identified and protected in policy measures and projects aimed at combating climate change. As the *UN Commentary on the Norms and Responsibilities of Transnational Corporations and other Businesses with Regard to Human Rights* specifically notes 'transnational corporations and other business enterprises shall ensure that the burden of negative environmental consequences shall not fall on vulnerable racial, ethnic and socio-economic groups.[61] Para 2(c)

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59 See N Brooks et al., *The Determinants of Vulnerability and Adaptive Capacity at the National Level and the Implications for Adaptation,* 15(2) GLOBAL ENVIRONMENTAL CHANGE151–163 (2005).

60 See *Women at the Frontline of Climate Change: Gender Risks and Hope: A Rapid Response Assessment* (2011), UNITED NATIONS ENVIRONMENT PROGRAMME, 6; See also *Gender Aspects of Climate Change* (2007), IUCN, www.iucn.org/en/news/archive/2007/03/7_gender_climate_change.pdf; Hemmati, *supra* note 4; see also G Terry, *No Climate Justice Without Gender Justice: An Overview of the Issues,* GENDER & DEVELOPMENT, 17:1, 5-18 (2009); see also G Terry, *Climate Change and Gender Justice* (2009), http://www.climateaccess.org/sites/default/files/Terry_Climate%20Change%20and%20Gender%20Justice.pdf, 3.

61 Commentary, *supra* note 41, at ¶14(c).

also stipulates that 'Particular attention should be devoted to the consequences of business activities that may affect the rights of women'.[62]

Implementing non-discriminatory policies would include laying down clear criteria for selecting project locations, conducting environmental impact assessment on the effects of a project at that location and providing public information on the outcome of the assessment. This is in line with the international environmental law principle of prevention which enjoins a state to exercise due diligence by developing anticipatory policies which regulate activities within its jurisdiction that are harmful to any part of the environment.[63] If the EIA shows that the inhabitants of the specific location would be affected by that project, then the project should be discontinued irrespective of the amount of emission reduction the project would generate.

Power imbalances and societal factors reduce the efficacy of most of the international efforts aimed at combating climate change.[64] As such, it is important for international climate change regimes to identify these power imbalances as aspects of vulnerabilities and to address them by spearheading concrete right based reform of all policy measures and projects aimed at combating climate change. There is a need for emerging climate change regimes to identify that the causes of vulnerabilities extend beyond poverty and lack of infrastructures. The fact that unequal power relations could worsen vulnerabilities is currently not addressed in sufficient details in the UNFCCC or the Kyoto Protocol. Without an international recognition of these skewed power relations that worsen vulnerabilities, national approaches to climate change might continue to be shaped and patterned along the lines of these societal and non-climatic misgivings. The end result

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62 Commentary, *supra* note 41.

63 See Art. 2(1) Espoo Convention, *supra* note 57; Art. 206, UNCLOS, *supra* note 57.

64 According to the UN Human Rights Commissioner:

The effects of climate change will be most acutely felt by those segments of the population whose rights protections are already precarious due to factors such as poverty, gender, age, minority status, migrant status and disability. Certain groups, such as women, children, indigenous peoples and rural communities, are more exposed to climate change effects and risks. The poorest women and men in the developing South – who have contributed least to global warming – find their livelihoods most threatened, yet have the weakest voice and least influence on climate policy.

See N Pillay, *Opening Remarks by the High Commissioner for Human Rights on **the Adverse Impacts of Climate Change on the Full Enjoyment of Human Rights*** (Feb., 2012), http://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx? NewsID=11872&LangID=e.

would be an uncoordinated, haphazard and an ineffective global response to the global problem of climate change.

To reduce the vulnerabilities in all regions at the same pace, human rights standards and principles should inform and underpin policy measures aimed at combating climate change. A model right based climate change treaty would identify as one of its objectives, the need for states to prevent the impacts resulting from the implementation of measures taken to mitigate or adapt to climate change impacts. It is important for international climate change regimes to address the overall human rights threats posed by climate change through policies and measures which are coherent with human rights standards. This would be by creating a common standard on how to address vulnerabilities and how to combat climate change without violating international human rights norms.

To prevent policies that discriminate based on status or gender, there is the need to establish and maintain an effective database for assessing risks on the basis of income, gender roles, and the constraints operating against their participation in decision making processes.[65] According to the *UN Statement of Common Understanding*, policy makers can address the issue of non-discrimination by ensuring that official data is disaggregated, by religion, ethnicity, language, sex, migrant status, age and any other category of human rights concerns discussed above. Policy makers would also incorporate proofing as part of the wider human rights – proofing of all programming.[66] Gender and income-proofing will help to assess the implications for low income people and women of any planned action, the representation afforded to such categories in decision making and ways to protect the interests of the marginalized through policies, legislation and programmes.

International climate change regimes could include provisions, which would make it compulsory for project proponents to demonstrate that a particular section of the society is not disadvantaged by a project before such project could be approved. This would be achieved by developing concrete risk assessment procedures to ensure better characterization of risk across populations, communities, or geographic areas. Measures would then be put in place to reduce high concentrations of

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65 *See* Francioni, *supra* note 58; J PAULSSON, *supra* note 58, at 134; Curran and Noone, *supra* note 58.

66 Report on Human Rights Based Approach, *supra* note 46.

risk among specific population groups. When making project decisions, project proponents would be required to demonstrate the distribution of projected risk. As part of the Assessment, project proponents must identify individuals and groups that may be differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status. Where groups are identified as disadvantaged or vulnerable, project proponents must propose and implement differentiated measures so that adverse impacts do not fall disproportionately on them and they are not disadvantaged in sharing development benefits and opportunities.[67]

There is also a need for an additional protocol or Accord that sets out the modalities for enforcing the linkages between climate change and human rights. This additional protocol would provide in concrete terms, right-based modalities for project approval and the human rights conditions that must be met before projects can be approved. As such, a second step would be for the COP to create an additional protocol that establishes and reflects human rights thresholds that must be met for project approval and registration. It is recommended that there should be an additional protocol which emphasise the importance of an integrated assessment to identify the human rights, social and environmental impacts and risks of projects; the importance of effective community engagement and consultation with local communities on matters that directly affect them; and the need for project proponents to manage and disclose the human rights, social and environmental performance of a project throughout the lifecycle of the project.

The protocol would set out modalities that contain legal thresholds on equality and non-discrimination that should not be breached either by the direct effect of climate change itself or as a result of policy measures or climate change of a given mitigation or adaptation project. Adopting these thresholds at the international level would provide clear guidelines on the human rights, social and environmental standards that projects are required to meet before they could be approved, registered and recognised for the purpose of gaining emission credits under the flexible mechanisms. Clear

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67 See Performance Standard 1, Social and Environmental Assessment and Management Systems, ¶12 in *Performance Standards on Social and Environmental Sustainability* (30 Apr., 2006), INTERNATIONAL FINANCE CORPORATION, http://www1.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+Sustainability/Sustainability+Framework/Sustainability+Framework+-+2006/Performance+Standards+and+Guidance+Notes/.

legal thresholds at the international level could also spur reform at the national level as they could serve as guidance on what policy makers should look out for to design a balanced and right based policy responses and projects for climate change adaptation and mitigation.

An additional protocol on human rights and climate change could also be the basis to grant the UNFCCC secretariat and the CDM Executive Board the powers and mandate to refuse to register projects that violate human rights. Adopting an additional protocol that empower current climate change bodies to consider these discriminatory practices would provide windows of opportunities and platforms for stakeholders to bring their complaints about a project, before an them at every stage of project planning and execution *i.e* prior to registration and post registration. By empowering these institutions such that individuals, communities and NGOs have a voice in the processes of approving climate change projects, the current pervasive culture of approving emission reduction projects without adequate attention to their potential human rights and environmental impacts could be addressed in a balanced and transparent way.

5. CONCLUSION

This paper has discussed one of the main concerns currently facing the implementation and execution of climate change policy measures and projects- this is the issue of deliberate targeting of poor communities as locations for projects and also the high incidents of exclusion and marginalization against women and vulnerable minority groups that could be affected by climate change projects. These groups and communities are particularly vulnerable to the effects of climate change because they are excluded from decision-making and are not empowered to demand greater recognition of their rights. As such, they bear most of the burden of climate change mitigation and adaptation as emission reduction projects are cited in their backyards. Such discriminatory practices are violations of some of the most fundamental principles international human rights law – the principle of equality and non–discrimination. International law de-emphasizes any distinction, exclusion, restriction or preference, which is based on any ground such as social, property, birth or other status.

This paper has provided reflections on the need for climate change negotiators to consider these issues ahead of post 2012 climate change regimes. As negotiators continue extensive deliberations aimed at amending

current international climate change regimes, it is important that the human rights issues facing the current regimes are brought to the fore and addressed to restore the integrity of these regimes.[68] Failure to address the linkages between human rights and climate change in the build up to a new climate change treaty would only preserve these human rights problems and challenges that have trailed extant current regimes and could even cast more doubts on the future of international cooperation on global climate change mitigation and adaptation.

The reforms identified in this paper could serve as invaluable compendium of ideas on the legal and institutional reforms that are pertinent ahead of the post 2012 agreements to reflect human right principles in climate change regimes. It could also provide legal contributions on how best to implement the extensive recommendations of the recently concluded CDM Policy dialogue which called for 'a reform of the governance structures of the CDM Executive Board in order to transform it to a more transparent, accountable, participatory and right-based institution'.[69]

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68 In Durban, Parties agreed to merge the two tracks negotiations that had taken place from 2005 to 2012, into one single negotiation track by establishing an Ad Hoc Working Group on a Durban Platform for Enhanced Action (AWG-DP). The AWG-DP has the mandate to develop 'a protocol, another legal instrument or an agreed legal outcome with legal force under the Convention applicable to all Parties'. See ¶2, UNFCCC, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action, FCCC, CP/2011/L.10. See also United Nations *Framework Convention on Climate Change, Conference of the Parties: Seventeenth Session: Durban* (2011), UNITED NATIONS, http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf; T Hill, *UN Climate Change Conference Durban: Outcomes and Future of the Kyoto Protocol* (2011), 7 MACQUARIE JOURNAL OF INTERNATIONAL AND COMPARATIVE 92–98.

69 CDM Policy Dialogue, *Climate Change, Carbon Markets and the CDM: A Call to Action: Recommendations of the High Level Panel on the CDM Policy Dialogue* (2012), http://www.cdmpolicydialogue.org/report/ues_en.pdf.

TOWARDS A COHERENT FRAMEWORK FOR ACHIEVING ENVIRONMENTAL SUSTAINABILITY IN INVESTMENT DECISIONS: REFLECTIONS ON RIO+20 AND THE JUDICIAL CONFERENCE

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ABSTRACT

The quest for environmental protection alongside economic development has been one of the constant topics propelled over the decades. It is for this reason that the recent Rio+20 Declaration sought to once again address the lucidity of this quest. This paper considers the principle of sustainable development within the context of the 1992 and 2012 Rio Declarations as a means of balancing environmental sustainability contained in the gamut of competing policy and developmental goals. The study then elects international investment law as a case study by considering under what circumstances, and for what reasons, an investment tribunal may want to range beyond the primary text of a treaty and interpret its provisions under the umbrella of sustainable development. Thereafter the paper addresses the aims of the Rio Declarations for environmental sustainability and how a judicial conference held on the same subject, suggests 'mechanisms' by which courts and tribunals may undertake a broader interpretative approach to environmental concerns. The paper concludes that though such interpretations are becoming an increasingly significant part of modern judicial decision making; something that is generally to be welcomed, it however begs for a recommendation that mechanisms such as Rio +20 should have reinforced and clearly highlighted robust implementation mechanisms for environmental protection so tribunals can remain within the bounds of adjudicative function.

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1. INTRODUCTION

Concern for the pollution and degradation of the planet, championed by the environmental movement,[1] was the driver for the first United Nations (UN) conference on the Human Environment in Stockholm, 1972. However, participating nations (especially developed countries) were concerned about the apparent implications of environmental protection for industrialization and economic growth. The World Commission on Environment and Development: Brundt land Commission was set up to look into this apparent conflict and came up with the principle of sustainable development,[2] which proved very popular and was adopted in the 1992 Rio Declaration.[3] In light of its origins, scholars and politicians equate sustainable development with environmental protection and proper use of natural resources,[4] requiring states, both at the national and international levels[5] to put in place legal mechanisms which furthered the

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1 The 'Silent Springs movement' commenced with a book of the same title by Marine Biologist Rachel Carson. Published in 1962, the book which helped set the stage for the environmental movement sought to expose the hazards of pesticide use on flora, fauna and humans and eloquently questioned humanity's faith in technological progress. *See* R. CARSON, SILENT SPRINGS (Houghton Mifflin Harcourt ed., Penguin Books)(1962).

2 WCED, *Our Common Future* (1987), *available at*http://www.un-documents.net/ocf-02.htm. (Last visited August30, 2012) This report, popularly known as the Brundtland Report, defines sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*, at 43. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. Its targets were multilateralism and interdependence of nations in the search for a sustainable development path. The report sought to recapture the spirit of the UN Conference on the Human Environment, i.e., the Stockholm Conference, which had introduced environmental concerns to the formal political development sphere. *Our Common Future* placed environmental issues firmly on the political agenda; it aimed to discuss the environment and development as one single issue.

3 Rio Declaration on Environment and Development, Principles 3 & 4, 1992, 31 ILM 874.

4 ELENA CAVAGNARO & GEORGE CURIEL, THE THREE LEVELS OF SUSTAINABILITY, 29 (2012).

5 Rio Declaration, *supra* note 3, Principle 11; Chapters 8, 38, 39. Also, Agenda 21 proposes to add a Commission on Sustainable Development to monitor implementation of Agenda 21, reporting to the General Assembly through ECOSOC. The Conference also recommended that the UN Secretary-General appoint a high-level board of environment and development experts to advise on other structural change required in the UN system. The UN Environment Program will need to develop and promote natural resource accounting and environmental economics, develop international environmental law, and advise governments on how to integrate

goal of sustainable development. Subsequently environmental regulation at both national and international levels has increased dramatically, with the enactment of several legal instruments on specific environmental concerns both at the global and national levels.[6]

However, while the broad aims of the principle are generally accepted, its exact ambit and meaning especially in the context of balancing its three recognised pillars (environment, economic and social) have been highly debated.[7] Moreover, the integration of sustainable development within legal frameworks primarily focused on economic development such as trade and investment have been slow, very broadly phrased, and usually ancillary in nature.[8] Consequently, an important part of the jurisprudence developed on sustainable development within these fields has been through decisions of arbitral tribunals. Even within these limited confines, consistent guidelines and implementation mechanisms necessary to achieve recognition of the environmental and social components of the principle have been sadly lacking. This is so even after another conference (WSSD 2002) was held in Johannesburg twenty years after Rio 1992, which focussed specifically on this issue of implementation of the principle of sustainable development.[9]

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environmental considerations into their development policies and programs. Cost of implementation: no estimate.

6 For instance the Commission for Environmental Cooperation (as part of NAFTA), http://www.cec.org/Page.asp?PageID=861&SiteNodeID=332&BL_ExpandID=157 (Last visited September 3, 2012); the Intergovernmental Panel on Climate Change (IPCC), Global Action Plan Environmental Policy, http://globalactionplan.org.uk/sites/gap/files/Global%20Action%20Plan%20Environmental%20Policy_2.pdf (Last visited August 1, 2011).

7 Jacob Park, *Debate 2.0: Is sustainable development still relevant?*, UNITED NATIONS UNIV., (Jan. 28, 2011), http://ourworld.unu.edu/en/is-the-concept-of-sustainable-development-still-relevant/; Third World Network, *Debate on "sustainable development goals" and thematic issues*, TWN Update on Sustainable Development Conference 2012 (May 7, 2012), http://www.twnside.org.sg/title2/sdc2012/sdc2012.120504.htm.

8 Engobo Emeseh, *Globalisation and Resource Development in Africa: Assessing the Facilitator-Protector Roles of International Law and International Institutions*, 25 DEVELOPMENT SOUTHERN AFRICA 5, (2008).

9 The World Summit on Sustainable Development, i.e., WSSD/Earth Summit 2002 took place in Johannesburg, South Africa, from August 26 to September 4, 2002. It was convened to discuss sustainable development concerns by the UN. WSSD gathered a number of leaders from business and non-governmental organizations, 10 years after the first Earth Summit in Rio de Janeiro. It was therefore also informally nicknamed "Rio+10".The Johannesburg Declaration was the main outcome of the Summit; however, there were several other international agreements. It laid out the Johannesburg Plan of Implementation as an action plan. *See*http://www.un.org/jsummit/ (Last visited September 21, 2012).

This paper, critically explores the existence of, and implications of this gap through an analysis of decisions relating to environmental concerns in investment arbitrations. It will be argued that the lack of effective mechanisms and consistency has implications for the national governments in regards to their regulatory decision-making, investors regarding effective appraisal of investment decisions and risks, and ultimately for the achievement of sustainable development, including environmental sustainability.

The paper is made up of six parts. Following this introduction, the paper elucidates further on the choice of investment decisions and an anchor for this paper by exploring the nexus between the economic and environment pillars of the principle of sustainable development, within the context of the 1992 and 2012 Rio Declarations. Thereafter it provides an overview of key concepts and developments in investment law as a background to the analysis in the next section on the treatment of environmental concerns in investment decisions. Finally, the paper provides an assessment of the outcomes of the two conferences, the Rio+20 and the judicial conference[10] in light of the stated aims of this paper, i.e., possible 'mechanisms' by which courts and tribunals may undertake a broader and more consistent interpretative approach to environmental concerns in investment decisions. the paper ends with the findings and concluding remarks.

2. Sustainable Development: Environment - Economic Interface

Sustainable development broadly articulated in Principle 1, which states that, "*human beings are at the centre of concern for sustainable development*" is the centre-piece of the 1992 Rio Declaration and has gained much currency in global international discourse and governance. It further goes on to mention in Principle 4 that, '*in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it*'. It is the case that any current analyses of the governance

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10 Rio+20 Declaration on Justice, *Governance and Law for Environmental Sustainability*, http://www.unep.org/rio20/Portals/24180/Rio20_Declaration_on_Justice_Gov_n_Law_4_Env_Sustainability.pdf.(Last visited September 1, 2012).

and regulation of international economic systems- trade or investment, will include sustainable development particularly within the context of mitigation of their environmental and social impacts.

At first glance, this portends a huge success in the principle contributing towards a holistic approach to economic development that balances the goals of economic efficiency, social development and environmental protection.[11] This is because despite the continuing theoretical contestations, the Brundtland Commission's popularized definition of sustainable development connotes a "path that meets people's needs in a way that the social, economic and environmental stock on which that development depends is not depleted in the process".[12]This development under the Rio Declaration was a noteworthy paradigm shift from the traditional mainly "environment only" focussed law and policies to a new system summarised as the "law of sustainable development",[13]which embodies environmental protection within the overriding broader mandate of the Rio Conference for both environmental and developmental matters to co-exist simultaneously.[14]

Even so, integrating these sustainability theories to concrete mechanisms for taming negative environmental and social impacts associated with economic development has been rather more elusive. Some environmentalists have argued that currently, sustainable development even in its narrowest *"economy v environment"* form provides governments with a clear exit clause with respect to environmental issues.[15] It is argued

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11 OECD, *Sustainable Development: Critical Issues* 2 (July 11, 2001), *available at*: http://www.oecd-ilibrary.org/environment/sustainable-development_9789264193185-en.

12 Hans Bugge & Lawrence Watters, *A Perspective on Sustainable Development after Johannesburg on the Fifteenth Anniversary of 'Our Common Future': An Interview with Gro Harlem Brundtland,*15 GEORGETOWN INTERNATIONAL ENVIRONMENTAL LAW REVIEW 359, 363 (2003); Abba Kolo, *Dispute Settlement and Sustainable Development of Natural Resources in Africa*, in NATURAL RESOURCE INVESTMENT AND AFRICA'S DEVELOPMENT 49, 71 (Francis Botchway ed., 2011).

13 The shift was deliberately made in Working Group III, at the fourth session of the UNCED Preparatory Committee (New York, March 1992), following a proposal by the Brazilian delegate. Peter Sands, *UNCED and the Development of International Environmental Law,* 8 JOURNAL OF NATURAL RESOURCE AND ENVIRONMENT LAW (1993); On the legal connotation of the concept, *see* Howard Mann, *Sustainable Development,* 3 YEARBOOK OF INTERNATIONAL ENVIRONMENTAL LAW (1992).

14 Programme for the Development and Periodic Review of Environmental Law, UNEP/Env. Law/2-2/L2 (1992), Annex I.

15 Andrea Ross-Robertson, *Is the Environment Getting Squeezed Out of Sustainable Development?,* PUBLIC LAW249-259 (2003).

that balancing is fictitious, with the economic pillar always prevailing over the other two: environment and social.[16]

One area where this controversy is perhaps more obvious is the integration of environmental concerns into international law regimes primarily focussed on economic growth such as trade and investment. Indeed it has been questioned whether sustainable development with environmental concerns as its premise can even be achieved within the current global economic models.[17] This is a very important issue as Agenda 21 specifically recognises the need for states to "strengthen the relationship between existing international instruments or agreements in the field of environment and relevant social and economic agreements or instruments".[18] The rationale for this is not far-fetched and was clearly highlighted in the current Rio+20 declaration as *"...promoting sustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development."*Evidently, to achieve sustainable development, large development or industrial projects, most of which are the preserve of international economic actors must address the needs of all major stakeholders, including environmental concerns of the communities they work within throughout the value chain.[19]

To a very large extent, international law and its systems provide the framework for regulating these actors, in terms of their protections and obligations.[20] Thus, re-evaluating the governance of these systems to ensure consistency with sustainable development principles, including effective mechanisms for achieving same are crucial. Furthermore, the necessity for action in this respect is essential as per the Agenda 21, and by the Secretary General of the Conference, that these challenges had reached the level of global security risks[21]; a sentiment that was understandably endorsed in light of even clearer evidence of global environmental challenges in the recent

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16 *Id.*

17 Georgia Carvalho, *Sustainable development: is it achievable within the existing international political economy context?*,9 SUSTAINABLE DEVELOPMENT 61–73(2001).

18 Rio Declaration, *supra* note 3, Principle 27.

19 Kolo, *supra* note 12.

20 Emeseh, *supra* note 8.

21 Maurice Strong, *Beyond Rio: Prospects and Portents,* 4 COLORADO JOURNAL OF INTERNATIONAL ENVIRONMENTAL LAW AND POLICY21, 29 (1993).

2012 Rio+20 Declaration. It is for this reason that the current largest source of external finance for most countries has been elected to highlight the environmental challenges in economic systems: in this case investment law.[22]

International investment law and its associated arbitral decisions, as one of the main regimes in the international economic order is a germane case study within the context of this paper. Foreign investment undeniably drives the process for economic development in the current world economy, being touted as the current largest source of external finance for developing countries in the last decade.[23] The international governance of this regime essentially circumscribes in some respects sovereign state action within their domestic jurisdiction, while the lack of firm obligations at international law and competition for investments, especially from developing countries has tremendously strengthened the position of the foreign investor *vis-a-vis* host states.[24] Although developing countries are far more susceptible to the power of Multinational Corporations (MNCs), the on-going global financial crisis which started in 2008 has shown the weakness even of the main developed economies in regulation of MNCs, especially in the financial sector.[25]

The focus on arbitral decisions is also borne out of the current governance system. As the next section will indicate there are a plethora of Bilateral Investment Treaties (BITs) and some regional treaties,[26]but there is

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22 External finance, debt and foreign direct investment; see UNCTAD, *Report by the Secretary-General of the United Nations to the General Assembly at its fifty-eighth session,* Chapter 2, http://unctad.org/en/Docs/gdscsir20041c2_en.pdf.(Last visited September 3, 2012).

23 *Id.*

24 SURYA P. SUBEDI, INTERNATIONAL INVESTMENT LAW: RECONCILING POLICY AND PRINCIPLE197 (ed. 2008).

25 EngoboEmeseh, RhuksAko, Patrick Okonmah, and Lawrence OgechukwuObokoh, *Corporations, CSR and Self Regulation: What Lessons from the Global Financial Crisis?,* 11 GERMAN LAW JOURNAL 230-259 (2010).

26 The rapid procreation of International Investment Agreements gives little doubt when asserted that international investment law has become one of the most dynamic fields of international law. Bilateral investment agreements refer to an agreement between two states only. There are a few regional investment agreements, i.e. North American Free Trade Agreement (NAFTA) (which came into force on January 1, 1994) between the Governments of Canada, Mexico and the United States (US), creating a trilateral trade and investment bloc in North America; Common Market for Eastern and Southern Africa treaty (COMESA) which came into force on September 30, 1982; Association of Southeast Asian Nations (ASEAN) which was adopted in November 2007 and the Energy Charter Treaty (ECT)signed in December 1994, together with a Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA). The treaty and the protocol came into effect in April 1998. To date this Treaty has been signed or acceded to

as yet no binding international instrument on investment which provides a binding framework for environmental sustainability.[27] Consequently, outcomes from these decisions provide a basis for analysis of the extent to which and the consistency of principles regarding integration of environmental concerns in investment disputes can be ascertained. The next section provides a brief overview of investment protection law as a background to the analysis of the decisions.

3. INTERNATIONAL INVESTMENT LAW

Foreign investment growth has blossomed as a result of a great degree of investment agreements providing protectionist measures against governmental influences.[28] These investment agreements are mostly designed to ensure principal protection of foreign investors, against the risk of loss of their assets, by according to them certain substantive rights, for instance protection against the taking or measures tantamount to the taking of property – expropriation,[29] fair and equitable treatment (FET),[30] most favoured nation treatment (MFN),[31]national treatment (NT),[32] among others.[33] Parsing these substantive rights is the observation that there lie no

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by fifty-one states, the European Community and Euratom (the total number of its Signatories is therefore fifty-three).*See* PRINCIPLES OF INTERNATIONAL INVESTMENT LAW (R. Dolzer & C. Schreuer eds., 2008).

27 Subedi, *supra* note 24, at 41.

28 PHILIPPE SANDS, JACQUELINE PEEL, ADRIANA FABRA AND RUTH MACKENZIE, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW (3rd ed. 2012).

29 Expropriation has been one of the strongest substantive principles of investment law, as it implies the taking of property either directly or indirectly. *See* Andrew Paul Newcombe, *The Boundaries of Regulatory Expropriation in International Law,*20 ICSIDREVIEW-FOREIGN INVESTMENT L.J.1-57 (2005).

30 NAFTA, *supra* note 26, Article 1105 requires that *'each contracting party shall, in accordance with the provisions of this treaty, encourage and create stable, equitable, favourable and transparent conditions for investors of other contracting parties to make investments in its area. Such conditions shall include a commitment to accord at all times to investments of investors of other contracting parties' fair and equitable treatment'.*

31 This provision seeks to ensure that the Host State (HS) accords treatment no less favourable than that which it accords to its own investors particularly when they are in like circumstances or similar investments. *See* United Kingdom (UK) Model BIT (2005), Article 3 (1).

32 This provision seeks to ensure that the HS accords the same favourable treatment to all foreign investors from different countries. *See* Spain-Argentina BIT (1991), Article IV (2); Plama Consortium Limited *v.* Republic of Bulgaria, Decision on Jurisdiction, February 8, 2005, 44 ILM (2005) 721, at paras 191, 195.

33 Usually contractual agreements, such as concession agreements. An example is the Argentina-US BIT (signed November 14, 1991 which came into force on October 20, 1994), Article XI: *'This Treaty shall not preclude the application by either Party of measures necessary for the*

corresponding obligations for foreign investors.[34] In this context, one question increasingly debated in academia is whether there is a need for a greater degree of balance in investment agreements between the legitimate rights and interests of all parties involved -host states and investors.[35]

While the historical context of investment law is important, it is far too simplistic to suggest that cardinal environmental, human rights, corruption or other obligations should not be engaged in this legal system. It is worth mentioning that in reality, the relationship between text and context is inevitably more complex than that would imply. In line with the principle of sustainable development and its mantra of a holistic approach to development, an appropriate option is that these investment agreements should impose direct environmental or other related obligations[36] upon foreign investors. Unfortunately all efforts at developing such a regime has not come to fruition, especially because developed states did not back such calls for a binding framework from the newly emergent states.[37] In addition the lack of a multilateral investment treaty will require a modification of all BITs, a highly arduous task bearing in mind the over 3000 investment agreements currently in force.[38] Indeed, even current investment agreements that contain environmental protections do so in vague terms when viewed within the entire context of the agreement, creating mere hortatory statements about environmental concerns which cannot fetter the rights of the investor's protection even where environmental concerns are at stake.[39]

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maintenance of public order, the fulfillment of its obligations with respect to the maintenance or restoration of international peace or security, or the Protection of its own essential security interests'.

34 Emeseh, *supra* note 8.

35 Luke Peterson, *Human Rights and Bilateral Investment Treaties: Mapping the role of human rights law within investor-state arbitration*,http://www.dd-rd.ca/site/_PDF/publications/globalization/HIRA-volume3-ENG.pdf. (Last visited July 12, 2011).

36 For instance: Environment law, Public Health, Human Rights Law, Corruption, among others. *See*Lahra Liberti, *Investissement set Droits de L'homme: The Policy Framework for Investment: The Social and Environmental Dimensions*, http://www.oecd.org/dataoecd/43/39/40306263.pdf. (Last visited July 20, 2010).

37 Such failed attempts include the Multilateral Agreement on Investments. *See* Subedi, *supra* note 24, at 52.

38 Mahnaz Malik, *Recent Developments in International Investment Agreements: Negotiations and Disputes*, ON ANNUAL FORUM FOR DEVELOPING COUNTRY INVESTMENT NEGOTIATORS, BACKGROUND PAPERS, IV 2 (Oct. 27-29, 2010),http://www.iisd.org/pdf/2011/dci_2010_recent_developments_iias.pdf.

39 A critical look at the US Model BIT affirms this position, where it states that when in doubt these treaties should be interpreted *in favorem* investors, stressing and expanding his rights so as

On the other hand, foreign investments protection mechanisms continue to grow speedily. This includes dispute settlement mechanisms[40] which do not require the exhaustion of local remedies[41] but allows for foreign investors to seek arbitration under the substantive reliefs mentioned above on the occasion of the loss or interference with their foreign investments. Equally significant is that these investor-state arbitrations under international investment law have brought to bear the various overlaps and interactions between international investment law and international rules derived from other domains of international law.[42]

As earlier noted, current international investment law does not offer a systematic set of rules to be applied to such questions, thus international investment tribunals have justified their conclusions in diverse ways.[43] This is against the background of increasing use of the protectionist mechanisms such as investment arbitration by foreign investors to challenge host state regulatory actions in the environmental and social sphere as a breach of foreign investments protection rules.[44] Cases under the North American

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to promote the flow of foreign investment. *See* R Dolzer, *Indirect Expropriations: New Developments?* 11 NEW YORK UNIVERSITY ENVIRONMENTAL L.J. 73 (2002).

40 Washington Convention on the Settlement of Disputes between States and National of other States, (which came into force on March 18, 1965), 575 U.N.T.S. 159 (ICSID). This is referred to as the International Centre for the Settlement of Investment Disputes (ICSID)-The ICSID Convention a purpose-built facility of the World Bank Group dedicated to the resolution of investment disputes and one which has been widely utilised, including the Report of the World Bank Executive Directors on the Convention, as well as the ICSID Regulations and Rules, as amended and in effect from April 10, 2006, *available at* http://icsid.worldbank.org/ICSID/ICSID/RulesMain.jsp. (Last visited January 29, 2010).

41 Some treaties may require an exhaustion of the local remedies or a waiting period before submission to arbitration will be allowed: the UK- Jamaica BIT permits submission of disputes to ICSID arbitration only if an *'agreement cannot be reached through pursuit of local remedies in accordance with international law'*. However, most treaties do not condition access to international arbitration upon the exhaustion of domestic legal remedies, a contrast to the process under major IHRs instruments. *See* M. SORNARAJAH, THE INTERNATIONAL LAW ON FOREIGN INVESTMENT 220-221 (3rd ed. 2010); Adriano Gardella v. Ivory Coast, 1 ICSID Reports 287; Mobil Oil v. New Zealand, 4 ICSID Reports 147, 158.

42 Emeseh, *supra* note 25.

43 For instance by the use of proportionality in certain disputes. *See* J. Krommendijk & J. Morijn, *Proportional by What Measure(s)? Balancing Investor Interests and Human Rights by Way of Applying the Proportionality Principle in Investor-State Arbitration, in* HUMAN RIGHTS IN INTERNATIONAL INVESTMENT LAW AND ARBITRATION (Pierre-Marie Dupuy, Francesco Francioni & Ernst-Ulrich Petersmann eds., 2009).

44 Piero Foresti, Laura De Carli and Others v. The Republic of South Africa, ICSID Case No.ARB(AF)/07/1 – An investment treaty arbitration filed by Italian investors against the South African Government in relation to its policy efforts to promote greater racial diversity in management and ownership positions in the South African economy.

Free Trade Agreement (NAFTA) investment disputes include sensitive host state regulations on the basis of the environmental protection, public safety, human health and the regulation of water and sewage concessions that were deemed to impact on foreign investment property.[45]

Thus based on matters of arbitral jurisdiction and other key factors[46] in an investment dispute, the concept of indirect expropriation or FET may override an environmental claim, thereby posing serious concerns for the attainment of the goals of environmental sustainability (sustainable development). One of these is that if governments are unduly held liable for the impact of regulations made for valid public policy purposes, this will have restricting effect on the exercise of their sovereign obligations for the benefit of their citizens as a result of fear of potential claims of breach of investment protection rules: this is what is referred to as the "*regulatory chill*".[47] Clear ascertainable rules on these matters prior to arbitration are therefore essential.

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45 Glamis Gold Ltd v. United States of America, UNCITRAL Award, (June 6, 2009) at para 8; Mondev International Ltd v. United States of America, ICSID Case No ARB (AF)/99/2, Award, (October 11, 2002, para 144; Parkerings-Compagniet AS v. Lithuania, ICSID Case No. ARB/05/8, Award, (September 11, 2007), paras 377-97;Azurix Corporation v. Argentina, ICSID Case No ARB/01/12, Award, (July 14, 2006); Decision on Application and Submission by Quechan Indian Nation, (September 16, 2005), para 10- the tribunal concluded under article 15(1) of the UNCITRAL Arbitration rules and deemed that the tribunal had power to accept amicus curiae briefs; Mondev International Ltd v. United States of America, ICSID Case No. ARB(AF)/99/2, Award, (October 11, 2002), para 144; Biwater Gauff (Tanzania) Ltd. v. United Republic of Tanzania, ICSID Case No. ARB/05/22, Award,(July 24, 2008), para 602.

46 A key problem in the investment treaty field is that the balance of power between treaty parties and tribunals concerning the authority to interpret investment treaties is askew. In theory, treaty parties are supreme when creating the law and tribunals are supreme when applying it in particular cases. In practice, this separation is never complete. How treaty parties interpret and apply the law affects what tribunals decide in particular cases. In addition tribunal awards in particular cases informally contribute to the interpretation, and thus the creation, of the law. As a result, some interpretive balance exists between treaty parties and tribunals, though neither enjoys ultimate interpretive authority in all circumstances. *See* Anthea Roberts, *Power and Persuasion in Investment Treaty Interpretation: The Dual Role of States* 104 AMERICAN JOURNAL OF INTERNATIONAL LAW 179 (2010); ICSID, *supra* note 40, Article 25 (1) sets out this limited jurisdiction as, *'The Jurisdiction of the Centre shall extend to any Dispute arising directly out of an Investment, between a Contracting party (HS) ... a national of another Contracting party (Home state)'*.

47 This argument pertains to the notion that the costly nature in terms of finances, a countries reputation through and after an arbitration process among other things cast a sour glance on a country's positive outlook on attracting investment – the sole purpose of the investment regime for host states in any case. Thus the effect of such costly arbitral proceedings will usher the host state into a realm where it will not adequately legislate or take measures to encourage the protection of vital environmental, human rights or public related investments for fear of

In the next section, the paper explores investment-environment decisions to ascertain whether or not there is a logical framework by which tribunals assess the legitimacy of governmental measures to protect the environment. The cases selected for this analysis are those which have environmental concerns as the basis for host state action. In addition, for purposes of consistency and the fact that they have given rise to more cases centred on environmental concerns, the analysis focuses mostly on disputes under NAFTA. Moreover, although NAFTA is a trilateral treaty and therefore only binds these state parties: Mexico, Canada and the United States of America, NAFTA arbitrations break ground into unchartered investment dispute terrains – including environmental concerns and thus offers a reference point for other investment tribunals although it is recognised that there is no binding rule of precedence in investment arbitration.[48] Of about ten cases on environment, the discussions in this paper focus on seven which encapsulate the main approaches adopted by investment tribunals in these instances. Following an overview of the cases and analysis of the decisions, an attempt will be made to draw on common themes where conceivable with the intention to offer some analysis of the findings.

3.1 Investment – Environment Case Law Jurisprudence: Non-Affirmation Of Environmental Purpose Underlying Government Measure

The first dispute is a non-NAFTA dispute because of its notoriety and importance within the context of the paper: the Santa Elena v. Costa

arbitration. See Kyla Tienhaara, *Regulatory chill and the threat of arbitration: A view from political science, in* EVOLUTION IN INVESTMENT TREATY LAW AND ARBITRATION 606 – 628 (Chester Brown & Kate Miles eds., 2011).

48 Albeit the non-existence of precedent in the investment arbitration context, there have several instance in which arbitral panels have looked at the decisions, tests and conclusions made by other arbitral panels in formulating their interpretation process. This reference was made in the Saipem S.P.A. v. People's Republic of Bangladesh(2007), ICSID Case No. ARB/05/07, Decision on Jurisdiction and Recommendations on Provisional Measures Award, (March 21, 2007), para 67: *'The Tribunal considers that it is not bound by previous decisions. At the same time, it is of the opinion that it must pay due consideration to earlier decisions of international tribunals. It believes that, subject to compelling contrary grounds, it has a duty to adopt solutions established in a series of consistent cases. It also believes that, subject to the specifics of a given treaty and of the circumstances of the actual case, it has a duty to seek to contribute to the harmonious development of investment law and there by meet the legitimate expectations of the community of States and investors towards certainty of the rule of law.'* Thus the decisions such as Metalclad v. Mexicothough based on the NAFTA could possibly influence another tribunal's ruling.

Ricadispute.[49] The facts are straightforward and essentially uncontested. *Santa Elena* Corporation, the investor acquired certain property and having undertaken various financial and technical analyses, proceeded to design a land development program as a tourist resort and residential community. Nonetheless, due to the impact on the wide variety of tropical wildlife in the area and in line with its international environmental obligations, the Costa Rican government issued an expropriation decree for the property. The investors did not object to the expropriation but contested the amount of compensation offered by the government - they consequently filed for arbitration under the ICSID process.[50]

The tribunal in its ruling refused to consider at all the environmental merits of the dispute. It clearly stated that the international source of the obligation to protect the environment was irrelevant,[51] and focused only on the obligation to pay compensation in cases of expropriation. According to the tribunal,

> *"expropriatory environmental measures no matter how laudable and beneficial to society as a whole are... similar to any other expropriatory measures that a state may take in order to implement its policies: where property is expropriated, even for environmental purposes, whether domestic or international, the state's obligation to pay compensation remains."*[52]

From this ruling the *Santa Elena* award clearly pins down the purpose of protecting the environment as an act that does not vary the legal character of the taking for which adequate compensation must be paid. The tribunal refused to examine the evidence submitted by Costa Rica concerning its international obligations to preserve the confiscated property.[53]

Strikingly in the next case- the Metalclad v. Mexicodispute, is rather more convoluted. Here, a federal permit was issued by Mexico's National Ecological Institute (INE) to Coterin - a Mexican firm to construct a

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49 Companiadel Desarrollo de Santa Elena S.A. v. Republic of Costa Rica, ICSID Case No. ARB/96/1, Final Award, (February 17, 2000).

50 *Id.*, at paras 15-21.

51 *Id.*, at paras71, 171.

52 *Id.*, at paras71-72.

53 The text of the *Santa Elena* award, the sweeping language of the above statements regarding the non-relevance of states' international obligations, as well as other decisions of investment tribunals point out that that the scope of these broad statements is confined to expropriations. This is particularly true with regard to the measure of compensation, for which tribunals generally have a much larger measure of discretion.

hazardous waste landfill in the City of Guadalcazur, Mexico.[54] The permit was issued subject to compliance with applicable technical requirements and a caveat that the permit did not authorize the facility's operation. Metalclad, a U.S. corporation, acquired Coterin, together with its permits, in order to construct and operate the facility.

Local opposition became intense after the Metalclad acquisition leading to the denouncement of the project by the state Governor. This denouncement appeared to have disappeared after months of negotiation, allowing Metalcladto secure an 18-month extension of the permit. Metalclad commenced construction of the landfill, which was inspected by both state and federal representatives. As construction progressed, almost five months into the construction the Guadalcazur Municipality notified Metalclad that it was unlawfully operating without a municipal construction permit. Metalclad applied for a municipal permit and, in the meantime, completed construction of the landfill.[55]

However, after the completion of the landfill's construction, the opening ceremonies were blocked by demonstrators and as a result, the landfill remained closed until when Metalclad entered into a *"Convenio"* with INE and *Proceduria Federal de Proteccion al Ambiente* (PROFEPA) providing for the landfill's operation and requiring Metalclad to carry out specified remediation measures at the site.[56] None of the favourable terms of the *"Convenio"*[57] impressed the Guadalcazur city council, which, without notice to or any opportunity to comment by Metalclad, promptly

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54 Metalclad Corporation v. Mexico, ICSID Case No ARB (AF)/97/1, Award, (August 30, 2000).

55 *Id.*Metalclad claimed (a claim which Mexico denied), that INE assured it that, while no municipal permit was required, it would facilitate amicable relations to secure such a permit, which could not be denied by the City and both INE's president and the director-general of Mexico Secretariat of Urban Development and Ecology (SEDUE) advised Metalclad that, except for a federal operating permit, all required permits for the facility had been secured by Coterin. In addition, early 1995 saw the University of San Luis Potosi being issued with a study on the landfill's environmental impact, finding that proper engineering would make the landfill site suitable. A similar conclusion was reached by PROFEPA, the independent federal office for environmental protection.

56 *Metalclad*, ICSID Case No ARB (AF)/97/1, at para49.

57 The *"Convenio"* required that: a designated portion of the property be a reserve for native species; a scientific advisory committee be created to monitor the remediation work and a provision of semi-annual seminars on hazardous waste management to local officials and the public, a discount for locally generated hazardous waste, free medical services to the Guadalcazur community and a contribution of various sums to local civic organizations- *Metalclad,* ICSID Case No ARB (AF)/97/1, at para 47.

denied Metalclad's still-pending request for a municipal construction permit. In spite of such action INE granted Metalclad a further permit authorizing a substantial expansion of the landfill capacity, though the facility remained dormant, presumably because of the preliminary injunction and the alleged necessity for the municipal construction permit.

The final straw that led to the arbitration was anchored by the state Governor who nearing his term of expiry from office issued a decree establishing a protected natural area that included the landfill site, thereby effectively preventing the landfill's operation, without reference to the municipal permit. Metalclad consequently filed for arbitration under NAFTA, claiming a breach of Articles 1110 - expropriation and 1105 - minimum standard of treatment requesting a compensatory claim for such breaches.[58]

On the minimum standards of treatment the tribunal held that Mexico had violated its obligations by not living up to its representations as made by federal and state officials that Metalclad would be able to operate the plant. Similarly the tribunal held that, failure to clarify an understanding of the Mexican law, and an absence of any clear procedures for foreign investors to easily discern the rules on permits, and further ruling against Mexican government legal experts by requiring a municipal permit and not notifying Metalclad of the relevant town meeting concerning its permit are all in violation of the minimum standards of treatment. Thus, the tribunal came to a conclusion that Metalcladhad been denied a FET because the municipal government had no authority to deny the construction permit on environmental grounds.

The tribunal ruled that the same actions that led to the findings of a breach of Article 1105 also led to a breach of the rules on expropriation, given that no compensation was paid after the Ecological Decree. Crucially, the tribunal went on to rule that the purpose for a government measure need not be considered in this regard and as such its test for expropriation was solely focused on the extent of the interference with property rights.[59]

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58 *Metalclad*,ICSID Case No ARB (AF)/97/1, at para 1.

59 *Id.*, at para 111. The Tribunal determined that Metalclad' sinvestment was completely lost as a result of Mexico's actions and proceeded to estimate the fair market value of the investment. On August 30, 2000 a special NAFTA tribunal awarded Metalclad $16,685,000. This award calculation did not include lost profits because the landfill had never started its operations but rather on the basis of the actual investment including 6% annual compounded interest made by Metalclad, as evidenced by Metalclad's tax filings and independent audit documents.

Unhappy with the dispute settlement Mexico challenged the NAFTA tribunal decision in a Canadian Court, alleging arbitral error but the outcome of the appeal made negligible changes to the previous award by the previous tribunal.[60]

The *Metalclad* dispute suggests the important nature on arbitral rulings and how such rulings have the potential to subsequently set a chill on environmental regulations within the NAFTA countries- a tide which could augur further implications for environmental concerns in the non-NAFTA states.[61]While the concept of legitimate expectations stood out throughout the *Metalclad* ruling on the point that Mexico did not clarify lucid and clear procedures for a foreign investor, one would axiomatically argue as to why the tribunal did not elaborate on the environmental aspects of the dispute and how and on what basis the foreign investor must also legitimately expect regulatory interference in terms of an investment with such serious environmental impacts. Understandably, the convoluted history of the case prima facie appears to raise political dimensions to this dispute. However, it is noteworthy, that just as in *Santa Elena*, the tribunal rejected looking into the purpose of the government measure. It may therefore be safe to conclude that as in *Santa Elena*, the tribunal would have come to the same conclusion regardless of the evidence on environmental grounds leading to the government measure. Moreover, the procedural failings of Mexico in this case, are similar to that in most developing countries with institutional capacity deficits and governance concerns. This provides a ready basis for arbitration against such countries even where the measure is taken for the public purpose. Thus both *Metalclad* and *Santa Elena*augurs a bleak outlook on the principle of environmental sustainability within the investment dispute resolution regime, creating concerns amongst environmentalists and governmental officials not only in the NAFTA countries, but systems based on the same rules of investment protection.

The "regulatory chill" that could result from such decisions is exemplified in Ethyl v. Canada which resulted from a ban by the Canadian

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60 The finding of the appeal set aside the earlier tribunal's findings on Article 1105 and partly on Article 1110 but still held that Mexico had expropriated Metalclad resulting from the Ecological Decree. The British Colombian court lowered the award from $16 million only down to $15.6 million due to the fact that Metalclad continued construction after the site was declared an ecological reserve, a negligent change at that.

61 The issue of precedence under investment law arbitration, *supra* note 48.

government of Methyl cyclopentadienyl Manganese Tricarbonyl (MMT), a fuel additive used to provide octane enhancement for unleaded gasoline because of health concerns.[62]Ethyl, a manufacturer and distributer of MMT was affected by this ban and consequently contested it under NAFTA. Ethyl argued the ban constituted a breach of the expropriation, national treatment and the performance requirement rights afforded by the NAFTA agreement.

With the strong, although contested arguments by Canada of the environmental and public health risks,[63]posed by the MMT, it is insightful that Canada agreed to rescind the MMT ban, paid Ethyl in excess of $19million and took an unprecedented step of issuing a statement that MMT was neither an environmental nor health risk.

Also, the most recent dispute in which the tribunal recognised the essential nature of the environmental concerns, yet found that government measures in pursuance of them breached investment rights, is the Marion Unglaubev. Costa Rica dispute under ICSID.[64] The claimants, Marion and Reinhard Unglaube owed properties located in Playa Grande, a picturesque beach on Costa Rica's Pacific coast and an important site on which female leatherback turtles lay their eggs.[65] Given the endangered status of these large turtles, and Costa Rica's well-known reputation as an eco-tourism destination, Costa Rica announced its intention to create a national park in this particular area and pursued this objective through a succession of legal, administrative and court-ordered measures whose stated purpose was to bring the Park into existence.[66]

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62 Ethyl Corporation v. Canada (Jurisdiction Phase), 38 ILM 708 (1999) 876; Health concerns for its citizens Manganese - The danger of inhaling manganese particles from autos burning fuel containing MMT known since 1800s; Airborne manganese causes neurological impairments and symptoms similar to Parkinson's disease and 1990s studies published in public health journal saw *"compelling evidence of neuro toxicity associated with low-level occupational exposure"* to manganese in the air. After finding that a gasoline additive was a health risk, Canada drafted a bill to eliminate the inter-provincial transport of the chemical.

63 However, there is not enough scientific evidence to support MMT's negative health effects. Automobile manufacturers have long argued that MMT damages emissions diagnostics and control equipment in cars, thus increasing fuel emissions in general. It should be noted that automobile manufacturers must bear the cost of repairing their car's damaged pollution control systems.

64 Marion Unglaube v. Republic of Costa Rica, ICSID Case No.ARB/08/1.

65 *Id.*, at para 37.

66 *Id*, at para 37.

Both parties to this dispute: the Republic of Costa Rica and the Claimants agreed in principle, to the legitimacy of protecting the leatherback turtles nesting area and for an environmentally sensitive development.[67] However the parties diverged sharply, concerning - the rights and protections available to owners of property in Costa Rica, as those rights may be affected by the Germany-Costa Rica BIT and on the scope of the rights of the Costa Rican government to either take property of private owners or to regulate their use of certain properties.[68]

Claimants assert that all attempts on their part to seek a possible agreement to the mutual benefit of both parties proved futile and that while Costa Rica initially kept its side of the agreement, it later begun to act contrary to the commitments in the said 'Agreement'.[69] Costa Rica argued as to the right to expropriate private property in pursuance of a clear public interest, namely the protection of a critically endangered species by creating a zone of state-owned, development-free property bordering the beaches on which the leatherback sea turtle nests.[70] Moreover, while acknowledging the *Secretaría Técnica Nacional Ambiental* (SETENA) suspension of all environmental assessment proceedings in August 2005 for properties within the Park, including Claimant's property, it maintains this action was not taken arbitrarily but rather, in compliance with a conservatory measure ordered by the Supreme Court and several other governmental institutions.[71] Claimants thus allege a breach of article 4(2) on expropriation, 4(1) on full protection and security, 2(1) on fair and equitable treatment, 7(2) on the breach of contractual obligations and 2(3) by impairing the administration, management, use or enjoyment of investments by arbitrary or discriminatory measures.[72]

In its ruling, the tribunal affirmed the strong undisputed environmental considerations, recognising that the "*... sharp decline in leatherback populations are reflected quite dramatically in the vastly reduced numbers of females nesting at Playa Grande in recent years...[and that] the subject of the protection of endangered species is an important*

67 *Id.*, at para 39.
68 *Marion Unglaube*, ICSID Case No.ARB/08/1, at para 39.
69 *Id.*, at para 59.
70 *Id.*, at para 127.
71 *Id.*, at para 131.
72 *Id.*, at para 97.

one...".[73] Nevertheless it reduced the "crucial elements" in the dispute to "*mundane issues of fact and law as they relate to the legality of the actions in dispute between the Parties.*" Consequently, the tribunal's role was to *"determine whether one or more violations of the Treaty have occurred, whether compensation is, therefore, due to the Claimants and, if so, in what amount?"*[74]

Furthermore, the implication of these cases is the overpowering nature of investment protection rules- in this case the broad definition of the right of "expropriation" in NAFTA is one that creates strong tensions with environmental protection, especially as it has become one of the most cumbersome investment rights to define and predict. The fact that in Ethyl, Canada could not ban suspected chemical components outright in favour of proven, safer alternatives (which under international environmental norms would be considered to be in line with the precautionary principle)[75] is a testament of NAFTA's effectiveness at constraining the regulatory power of states for public purpose. This dispute also serves as an example of inappropriate corporate influence on regulation and represents precisely the result that environmentalists and regulators fear: the regulatory chill effect.[76]

3.2 Arbitrators Affirm Global Environmental Regulatory Obligations

The principles which have emerged from the above cases are by no means universal as there have been instances where tribunals have looked to the purpose of the measure in deciding whether or not investment protection rules have been breached. Methanexv. United States, serves as one prime example. The facts of the dispute were that, California through

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73 *Id.*, at paras 165, 167.

74 *Id.*, at para 167.

75 The precautionary principle or precautionary approach states that if an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is *not* harmful falls on those taking the action. Peter Montague, *The Precautionary Principle in the Real World*, Environmental Research Foundation (January 21, 2008), http://www.precaution.org/lib/pp_def.htm.

76 Julia Ferguson, *California's MTBE Contaminated Water: An Illustration of the Need for an Environmental Interpretative Note on Article 1110 of NAFTA* 11,Colorado Journal of International Environmental Law and Policy 16 (2000).

an executive order called for a phase out of Methyl Tert-butyl Ether (MTBE) in California gasoline in conjunction with a report issued by an environmental assessment on the ill-effects of MTBE by the University of California.[77]Interestingly, the report recommended in addition to the ill-effects of MTBE that California phase-out MTBE over a several year interval instead of implementing an immediate ban on MTBE.[78]

Methanex in turn filed an investor-state dispute challenging the Californian measure on the grounds that it was *"both directly and indirectly tantamount to an expropriation"* under Article 1110 because it substantially diminished the value of the company's investments in the U.S. for the sale and production of methanol.[79] Methanex based its Article 1105(1) claim on the argument that the MTBE ban was intentionally discriminatory, targeting its investments.

In rejecting the claim, the tribunal recognized the environmental measure adopted by the host state as one that did not amount to an expropriation. The tribunal first focused on whether the text of Article 1105(1) covered discriminatory conduct.[80] It explained that Article 1105(1) does not mention discrimination, and that a separate reference to discrimination in Article 1105(2) is an indication that Article 1105(1) was not intended to include a non-discrimination norm.[81]In assessing whether the ban was expropriatory, the tribunal noted as follows:

> *[A] Non-discriminatory regulation for a public purpose, which is enacted in accordance with due process and, which affects, inter alia, a foreign investor or investment is not deemed expropriatory and compensable unless specific commitments had been given by the regulating government to the then putative foreign investor contemplating investment that the government would refrain from such regulation.*[82]

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77 The report concluded that there are significant risks resulting from the MTBE contamination of surface water and groundwater. Methanex v. United States of America, First Partial Award, (August 7, 2002), para 26.Also, it was argued to be a carcinogen to animals and possibly to humans and finally there is *"no significant additional air quality benefit to the use of oxygenates such as MTBE in reformulated gasoline"*, at para 12.

78 *Methanex, Id.*, at paras 13-14.

79 Methanex v. United States of America, *supra* note 77, at para 83.

80 *Id.*, at para 313.

81 *Id.*, at paras 14-16.

82 *Id.*, at para 7.

Thus, the tribunal's determination that the ban was not expropriatory was based on its conclusion that the regulation was one of general application, in the public interest, scientifically justified, and accomplished with due process. As such, the tribunal concluded, *"the California ban was a lawful regulation and not an expropriation."*[83]

This wide discretion given by the tribunal in the *Methanex* Award has been heavily criticized although lauded by environmentalists.[84] The reason for such criticism stems from the fact that the tribunal did not give clear guidelines as to the wide discretion which was granted to the host state to decide on environmental matters.

A similar investment dispute which lauded the environmental legislation was the Chemturav. Canada dispute. In this dispute voluntary measures were put in place, in collaboration with Canada's Pest Management Regulatory Agency ("PMRA")[85] to phase out the use of Lindane for canola seed treatment in Canada.[86]A Lindane review was completed and the PMRA decided that regulatory action banning its use on canola seeds was necessary. By the time Canada was considering banning Lindane the U.S. had already prohibited its use.[87]

Chemtura, a U.S. investor manufactured a Lindane-based pesticide used to treat canola seeds and alleged that Canada violated numerous NAFTA provisions when it banned Lindane for use as a pesticide. First, pursuant to articles 1105 - minimum standard of treatment, 1103 - MFN and 1110 - expropriation, the company claimed compensation for the losses attributed to the ban. Per article 1105, Chemtura contented that it did not receive, as the provisions states, "treatment in accordance with international law, including FET and full protection and security." Also, pursuant to

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83 Lindane was first introduced into Canada in the late 1930's; Methanex v. United States of America, *supra* note 77, at para 15.

84 Chemtura Corporation v. Canada, NAFTA/UNCITRAL Award, (August 2, 2010).

85 PMRA is the federal regulator of pest control products in Canada.

86 Chemtura Corporation v. Canada, *supra*note 84, at paras 92-96.

87 *Id.*, at para 49. Since then, it has been designated as a possible carcinogen, an environmental contaminant, and identified as the cause of various additional negative health consequences in humans and animals, including death. The chemical has been banned or had its use restricted in numerous countries. However, Canada has merely restricted it use, thus while Lindane was no longer permitted to be used in pesticides in Canada, it is still an active ingredient in shampoos used to treat head lice, *Id.,* para 47. For instance, Japan banned Lindane in 1971, Germany in 1988, and New Zealand, Austria, Brazil and Norway have done the same.

article 1103, the company alleged that it received less favourable treatment than similar investors.[88]

Here, the tribunal noted that the three NAFTA parties had clarified in a binding 2001 interpretive statement that the MFN protection per article 1105 was tethered to a customary international law standard for the minimum standard of treatment owed to aliens. Thus although the arbitrators seemed to suggest that the customary international law standard encompasses the FET found in other investment treaties: the arbitrators deferred to the wishes of the NAFTA parties and did not accord the claimant's efforts to import in other (potentially more generous) FET clauses from other treaties concluded by Canada with other states.[89]

On the grounds of expropriation[90] the tribunal alluded to the assertion that the lengthy regulatory process and related decision were acceptable; and considering the worldwide treatment of Lindane, Canada was well within reason to ban its use as a pesticide.[91] This conclusion was reached after the tribunal had employed a three-test approach to evaluate an expropriation claim: "whether there is an investment capable of being expropriated; whether that investment has in fact been expropriated and whether the conditions set in Article 1110(1)(a)-(d) have been satisfied…"[92]In spite of the lack of precedence in investment arbitration, the tribunal paid homage to the NAFTA tribunal decision in Pope v. Talbot[93] in the definition of an indirect expropriation as one that must involve the "substantial deprivation" of an investment. To fall within the scope of expropriation, Chemtura had to be substantially deprived of the investment. According to the tribunal, the "substantial deprivation test" is a

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88 *Chemtura Corporation*, NAFTA/UNCITRAL Award, (August 2, 2010), at paras 231-237; The Company demanded approximately $79 million in damages and costs associated with the arbitration—expert and legal fees, and related taxes and interest. *Id.*, at para 95.

89 The arbitrators rather deferred to the wishes of the three NAFTA parties, Canada, the USA and Mexico, who had each argued in the *Chemtura* case that the MFN clause could not be used in this fashion so as to detour around the parties' earlier efforts to clarify the content of Article 1105.

90 NAFTA, *supra* note 26, Article 1110 (1) states that *'no party may directly or indirectly nationalize or expropriate an investment of an investor of another Party in its territory or take a measure tantamount to nationalization or expropriation of such an investment ("expropriation"), except: (a) for a public purpose; (b) on a non-discriminatory basis; (c) in accordance with due process of law…; and (d) on payment of compensation…*

91 *Chemtura Corporation*, NAFTA/UNCITRAL Award, (August 2, 2010), at para 266.

92 *Id.*, at para 257.

93 Pope& Talbot v. Canada Award, 7 ICSID REPORTS 69, (June 26, 2000), para 102.

fact-based assessment, unique to the individual circumstances at hand. Factors such as the share of business represented by the investment are taken into consideration, as well as the degree of control over the operations, and which party exhibited control. Of substantial value to the outcome of this dispute was that the Lindane business was only a small part of Chemtura's operations - with its yearly sales based on its additional business lines which grew during the period the ban was instituted. Accordingly, the tribunal stated that *"the evidence shows that the measures did not amount to a substantial deprivation of the Claimant's investment."*[94]

The arbitrators also took seriously Canada's claims that its actions were taken as a result of its obligations under international law conventions in the environmental field. While arbitrators did not view these considerations as immunizing Canada's actions from review, they appeared to deem them as evidence of the government having acted in good faith *vis-à-vis* Chemtura and its products.

This dispute and that of *Methanex* are noted by proponents of investment arbitration as putting to rest concerns that NAFTA Chapter 11 impedes public health and the environmental regulation. Yet the awards in both disputes are troubling. In *Chemtura*, the award is criticised for not delving into the intricacies of treaty interpretation and construction, and for not setting forth any lengthy accounts of the tribunals' reading of the NAFTA protections.[95]

First, the tribunal, like the earlier Glamis Gold v. United States tribunal, rejected submissions by Canada that tribunals should defer to good faith regulatory measures of governments but yet still with scanty elaborations declined to adopt the approach of the earlier *Glamis* tribunal, which required the claimant to provide affirmative evidence of any alleged expansion of the NAFTA minimum standard of treatment beyond its

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94 *Chemtura Corporation*, NAFTA/UNCITRAL Award, (August 2, 2010, at para 265.The arbitrators took a dim view of Chemtura's claims – going so far as to remark upon the claimant's *"elusive"* behaviour and its occasionally *"disingenuous"* and *"inconsistent"* arguments in the arbitration. Indeed, after dismissing all of Chemtura's claims, arbitrators signalled that it would be *"fair"* for the claimant to bear the costs of the arbitration and that it would be *"just"* and *"appropriate"* for the firm to reimburse Canada for half of its legal costs. (688,219USD). Chemtura paid half of Canada's legal costs at 5.778 Million CAD.

95 Luke Eric Peterson, *Arbitrators in Chemtura v. Canada NAFTA Arbitration take Economical Route in finding no Treaty Breaches*, Investment Arbitration Reporter, http://www.iareporter.com/articles/20100916_11. (Last visited September 10, 2012).

established content in international customary law. Canada, Mexico, and the U.S. have argued that claimants must satisfy this requirement. However, arbitrators in numerous NAFTA cases have rejected this position, thus facilitating investor claims. Secondly, the tribunal noted repeatedly that Lindane was banned in many other countries, making it unclear whether the ban would have been upheld had Canada been a regulatory leader in limiting the pesticide on health or environmental grounds - a similar observation in the *Methanex* dispute.

Of some note, the *Chemtura* tribunal did flirt with the idea that regulatory delays might give rise to some material economic impact on a foreign investor, but observed that the claimant had asserted no independent damages arising from long-running regulatory reviews. The tribunal's brief discussion of this issue was redolent of a few other investment treaty arbitrations where tribunals appeared to entertain the notion that treaty breaches may or may not arise depending upon whether there was some measurable economic loss.

It further stated that the measures in question constitute *"a valid exercise of Canada's police powers."*[96] On the facts of the case, the arbitrators saw no *"substantial deprivation"* of Chemtura's investments such that there might be an expropriation per article 1110 of NAFTA by Canada. Moreover, in a development that might have been more widely heralded a decade ago, arbitrators also signaled their view that Canada's actions fell within that country's police powers under international law. However as to why this particular dispute among the many others passed this unique *"police powers"* test stands in oblivion.

By looking at these two positive cases regarding environmental concerns, investment arbitration proponents and economists can generally highlight the environmental sustainability chime. However, as shown above, the cases do not provide clear guidelines which will inform other arbitral panels, treaty makers, home and host states and foreign investors on how and on what basis a particular tribunal may or may not acknowledge

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96 *Chemtura Corporation*, NAFTA/UNCITRAL Award, (August 2, 2010), at para 266. The tribunal explained that the measures challenged by the Claimant constituted a valid exercise of the Respondent's police power. Article 1105 of NAFTA, the [Pest Management Regulatory Agency of Canada] took measures within its mandate, in a non-discriminatory manner, motivated by the increasing awareness of the dangers presented by Lindane for human health and the environment. A measure adopted under such circumstances is a valid exercise of the State's police powers and, as a result, does not constitute an expropriation.

environmental concerns - a situation which could also affect developing countries in their nascent environmental - legislative jurisdictions.[97]

The significance of this dispute also lies in the fact that even though in the *Chemtura* dispute Canada was successful; a significant amount of resources had to be expended to defend against the claim.[98] Ultimately, the Canadian taxpayer spent $3 million to defend a challenge to a decision with a significant public purpose taken by a democratically elected government, taking into account the obvious fact that the operation of complex administrations is not always optimal in practice and that the mere existence of delays is not sufficient for a breach of the international minimum standard of treatment".

3.3 ARBITRATORS CONSIDER BUT NO AFFIRMATION OF GLOBAL ENVIRONMENTAL REGULATORY OBLIGATIONS

Apart from cases where there was a blatant neglect of the environmental concerns and others where such concerns were affirmed as legitimate exercise of the regulatory power of the state for public purposes, there is a third category where the tribunal nurtured the important nature of the environmental concerns but still found a violation of the investment agreement rights: S.D. Myers v. Canada.[99]

The S.D. Myers v. Canada dispute[100]concerns a claim for breach of investment rules as a result of the restriction of movement of certain hazardous waste across the Canada-US border in line with international environmental commitments and for public health and environmental purposes. Both the U.S. and Canada banned the future production of PCB following the Council Decision by the OECD in 1973 to control and limit the use of PCBs in order to reduce the risk to human health and the environment.[101] The only exception forexport into the U.S. was where prior

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97 M. Sornarajah, *A Law for Need or A Law for Greed?: Restoring the Lost Law in the International Law of Foreign Investment,* 6 INTERNATIONAL ENVIRONMENTAL AGREEMENTS: POLITICS, LAW AND ECONOMICS329, 349 (2006).

98 *Chemtura Corporation,* NAFTA/UNCITRAL Award, (August 2, 2010).In the end, the total costs associated with the arbitration, (including a $4000 per day fee for each tribunal member amounted to almost $9 million, with Canada's outlay at just under $6 million.

99 S.D. Myers v. Canada, 40 ILM 1408 (2001).

100 *Id.*

101 *S.D. Myers,*40 ILM 1408 (2001). In 1977, Canada added PCBs to the toxic substances list under the Environmental Contaminants Act and later in 1988 replaced by the Canadian Environmental Protection Act (CEPA). This Act was supplemented by the PCB waste export regulations of 1990 PCB Waste Export Regulations, SOR/90-453 (1990) (Can.). OECD,

approval of the Environmental Protection Agency (EPA) had been obtained.

In 1980, the U.S. closed its borders to the import and export of PCB waste and signed an agreement with Canada to reduce the trans-boundary movement of hazardous waste.[102] In 1989, Canada signed the Basel Convention on the Control of trans-boundary movements of hazardous wastes and their disposal (Basel Convention).[103] In 1995 to further the PCB waste removal in an environmentally sound manner in Canada and to prevent any possible significant danger to the environment or to human life or health', the Canadian Environment Minister signed an interim order banning the export of PCB waste from Canada.[104] This became Final Order in February 1996.

S.D. Myers then brought a claim against Canada under NAFTA chapter 11. The grounds for the claim were[105]that Canada had breached NAFTA article 1102(NT), article 1105(minimum standard of treatment), article 1106(performance requirement) and article 1110(expropriation). The tribunal determined the applicable law according to article 1131 NAFTA, the Trans-boundary Agreement, the Basel Convention and the NAAEC of concluded that the Trans-boundary Agreement between Canada and U.S. governed the movement of waste between Canada and U.S. and not the Basel convention[106] - a significant jab of an international environmental law obligation. The panel rejected Canada's defence that the Enforcement Discretion was an unlawful action by EPA stating that its determination would be based on the actions of the disputing parties on the basis of the law as it appeared to exist. Canada passed the Interim and Final Orders and did not challenge the legality of the Enforcement Discretion".[107]

To determine whether the Interim Order was a legitimate

Protection of the Environment by Control of Polychlorinated Biphenyls C (73) I (Final) (1973).

102 *S.D. Myers*, 40 ILM 1408 (2001). The Agreement Between the Government of Canada and the Government of the United States of America Concerning the Trans-boundary Movement of Hazardous Waste, October 28, 1986, C.T.S. 1986 No. 39 (came into force on August 11, 1986)[hereinafter Trans-boundary Agreement].

103 *S.D. Myers*, 40 ILM 1408 (2001). The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, March 22, 1989, 1673 U.N.T.S. 57 (came into force on May 5, 1992) [hereinafter Basel Convention].

104 Explanatory note attached to the interim order in *S.D. Myers*,40 ILM 1408 (2001), at para 123.

105 *S.D. Myers*, 40 ILM 1408 (2001),at paras 66-76.

106 *Id.*, at para213.

107 *Id.*, at para191.

environmental measure the panel referred to the WTO/GATT precedent and held that *"where a state can achieve its chosen level of environmental protection through a variety of equally effective and reasonable means, it is obliged to adopt the alternative that is most consistent with open trade"*[108] and that the environmental objectives of the Canadian government could have been achieved through other means.[109]

This outcome is quite consistent with the language and the case law arising out of the WTO family of agreements. The tribunal based its decision on the factual findings that a large part of the PCB would be transported from Ontario and Quebec to a waste treatment facility in Alberta, which is much further than the S.D. Myers facility in Ohio.[110] Nonetheless, the panel did not address the fact that the shipment of the waste to Ohio is only for recycling after which it would again be transferred to Texas for incineration.[111] It also declared that the ban was not justified by bona fide environmental concerns and therefore no legitimate environmental reason for the ban.[112]

Clearly the tribunal accepted that, *"international law makes it appropriate for tribunals to examine the purpose and effect of governmental measures."*[113] Nevertheless, in meeting its international environmental commitments, the tribunal obliges host states to adopt measures that are least inconsistent with investment protection.[114] Although on the face of it this may appear innocuous, it is a significant restriction of a sovereign government's margin of discretion in the discharge of its regulatory function for legitimate public policy concerns, thereby resulting in the

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108 *Id.*, at para231.

109 *Id.*, at para 144.

110 *Id.*, at para56.

111 *S.D. Myers*, 40 ILM 1408 (2001).*See also* Todd Weiler, *A First Look at the Interim Merits Awards in S.D. Myers Inc and Canada: It is possible to balance Legitimate Environmental Concern with Investment Protection* 24 HASTINGS INTERNATIONAL AND COMPARATIVE LAW REVIEW 177 (2001).

112 *S.D. Myers*, 40 ILM 1408 (2001),atparas43, 60.

113 *Id.*,at para281.

114 *Id.*, at para221.

"regulatory chill claim".[115] It is contestable if the tribunal is more qualified than the state to determine the most effective means and measures.[116]

4. INVESTMENT CASE ANALYSIS

The above cases evidence a number of key concerns regarding environmental sustainability within the international investment regime. The first is the lack of certainty on the part of both the foreign investors and host state governments regarding how a tribunal will view regulatory measures by governments for legitimate environmental purposes relative to investment protection rights. Tribunals may totally disregard the purpose, however legitimate of such a measure or affirm that the purpose is relevant and might be a legitimate defence to a claim of breach of investment protection rules, but without any clear criteria or guidelines as to how such a conclusion is reached. This leaves both parties unable to effectively assess the "risk" of either their investment or regulatory decisions.

A related, but different concern is that this opacity demonstrates to a large extent a lack of, or very slow progress, in the integration of environmental sustainability as an essential part of sustainable development principle in the investment law regime. Such a gap is crucial, because as noted earlier, investment drives the global economy and much of the grave environmental challenges facing the global community are rooted in industries or projects financed by foreign investment. If it is the case that environmental concerns are not integral to the investment law regime, or there is such uncertainty about investment rights *vis-a-vis* legitimate environmental concerns, the outcome constrains or restricts policy and decision making deals, auguring a serious blow to the actualisation of the holistic approach to growth and development envisaged under the principle of sustainable development.

Thirdly, there is a plethora of evidence that several countries, especially in the developing world, have weak regulations and poor enforcement of the environmental impacts of multinationals. Several factors, including capacity deficits and governance challenges as well as

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115 Moshe Hirsch, *Interactions Between Investment and Non-Investment Obligations in International Investment Law, in* THE OXFORD HANDBOOK OF INTERNATIONAL INVESTMENT LAW 16 (Peter Muchlinski, Federico Ortino and Christoph Schreuer eds., 2008).

116 Kyla Tienhaara, *The Expropriation Governance: Protecting Foreign Investors at the Expense of Public Policy,* 2 JOURNAL OF WORLD ENERGY LAW & BUSINESS 201(2011).

economic factors account for this. The regulatory chill effect from these decisions can only further weaken the resolve and will to effectively regulate legitimate environmental concerns. Countries can therefore be locked into maintaining the status-quo of poor environmental standards.

Furthermore, the rigidity of the application of investment protection rights fails to recognise one of the fundamental realities about environmental regulation which is that they are very much science driven. This not only means that regulation has to evolve in line with the science (thus resulting in changes in the status-quo that may be considered expropriation), but also that often there an absence of consensus in the science about risks, or cause and effect. Consequently, it is often a matter of judgment on the part of policy and law-makers whether or not to adopt a particular posture in light of the available evidence. This underlies the precautionary principle in environmental, a factor that a settlement case such as Ethyl *v.* Canada fails to consider. As such even disputes with "positive" outcomes for the environment such as *Methanex*is not particularly helpful owing to the huge reliance on the certainty of the scientific evidence.

In light of the above, there is clearly the need for a predictable framework or mechanism by which tribunals can adjudicate on investment disputes in a manner that effectively integrates environmental sustainability into the process. The instinct in such instances is to look towards an international investment treaty which addresses these concerns. However, it is unlikely that such a treaty would be forthcoming in the near future, if at all. The outcome from Rio+20 promised just such a high level of respect and underlie its consideration within the context of this paper and the analysis so far.[117]

5. Appraisal Of The Rio Declarations

The "Future we want" Rio+20 document emanating from the Conference[118] being a non-binding statement of principles[119] failed

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117 George Monbiot, *After Rio, we know. Governments have given up on the planet*, The Guardian, June 25, 2012, *available at* http://www.guardian.co.uk/ comment is free/2012/jun/25/rio-governments-will-not-save-planet. (Last visited September 22, 2012). *See* Fiona Harvey, *Global fight for natural resources has only just begun*, The Guardian, July 12, 2012, *available at*http://www.guardian.co.uk/ environment/2012/jul/12/global-natural-resources-food-water?INTCMP=SRCH (Last visited September 22, 2012).

118 This was the fourth in the series of major UN conferences on the environment, with the first being the UN Conference on the Human Environment held in Stockholm 1972; the United

particularly in outlining robust policies and implementation mechanisms for the integration of environmental sustainability into the international legal system, and in particular, the investment regime; expectedly a natural evolution since Rio 1992. The document has since been panned by the majority of civil society groups, environmental NGOs and activists, and even the media[120]

Within the context of this paper, at least, one cannot but agree with some of the criticisms of the Rio+20 outcome document. Despite the challenges to environmental sustainability in the international investment regime earlier articulated in this paper, the Rio+20 Declaration pays very scant attention to this subject. Rather foreign investment is only mentioned once in Principle 271. However it would be impossible to achieve the kinds of environment protections referred to in the document without reference to foreign direct investment that embodies sustainable development goals.[121] Yet, unlike the inclusion of trade in Principle 281, the international investment regime was not specifically recognised as one of the main drivers of the international economic system and its consequent significance to the achievement of sustainable development.

More troublingly, Rio+20 appears to affirm unreservedly the current international economic law, and subjects sustainability principles to it. For instance, Principle 58 (a) *"affirm[s] that green economy policies in the context of sustainable development ... should be consistent with international law"*. This is very problematic, as it is arguably inconsistent with the promotion of environmental sustainability. The status of sustainable development as a principle of international law is still highly contested, and its integration into the international economic regimes steeped in challenges. This has been especially demonstrated within the context of international investment law in the earlier analysis of rulings of

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Nations Conference on Environment and Development, held in Rio 1992 being second; and the third World Summit on Sustainable Development held in Johannesburg 2002.

119 This has now been adopted by the UNGA Assembly. See *The Future We Want*, UNGA Resolution 66/288, July 27, 2012, http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E.(Last visited September 20, 2012).

120 *Id.* For instance, *A gift to corporate polluters*, http://www.foei.org/en/media/ archive/2012/rio-20-declaration-a-gift-to-corporate-polluters. (Last visited Sep 20, 2012).

121 Rio Declaration, *supra* note 3, Principle 271 provides- *"We underline the need for enabling environments for the development, adaptation, dissemination, and transfer of environmentally sound technologies. In this context, we note the role of foreign direct investment, international trade and international cooperation in the transfer of environmentally sound technologies. We engage in our countries as well as through international cooperation to promote investment in science, innovation, and technology for sustainable development."*

investment tribunal. What Principle 58(a) appears to do therefore is to affirm the rulings of those investment tribunals that held environmental sustainability purpose to be irrelevant in the consideration of whether governmental regulatory measures breach investment protection rights.

A further concern in the Rio+20 Declaration is its apparent watering down of the language of sustainable development by using it interchangeably with *"sustained economic growth"* in various parts of the document.[122] In doing so, it not only priorities the economic component of the principle over the social and environmental, but goes further by equating sustainable development itself with economic growth. This amounts to standing the principle on its head since growth can be sustained without being sustainable and the very rationale for the principle of sustainable development is a check on unbridled economic growth.

The failings of the UN Rio+20 with regards to its undue leaning towards economic growth can perhaps be explained by the fact that it was held against the backdrop of the prevailing weak global economy brought on by the global financial crises. State parties, particularly capital exporting states may have felt constrained to use the conference to help promote economic growth. If that be so, it is inherently paradoxical since the financial crisis is perhaps itself one of the clearest evidence of the dire consequences of unbridled economic growth driven by poorly regulated corporate actors. That is however beyond the scope of this paper. For our present focus, in light of the failings of Rio+20, we look in the next section to the outcome from a sister-conference at Rio+20, - The World Congress on Justice, Governance and Law for Environmental Sustainability (The Judges Conference), for guidance on mechanisms for achieving integration of environmental sustainable within the adjudicatory process.[123]

6. The Rio+20 Judges' Conference and Mechanisms for Integrating Environmental Sustainability in Adjudicatory Process

122 Rio Declaration, *supra* note 3,Principles 11, 52, 56, 58 e, 94, 158, 281.

123 Rio+20, *supra* note 10. This sister conference held under the auspices of the UNEP, during the same week as the Rio+20, involved over 150 judges, lawyers, and other judicial personnel from across the globe, including chief justices, heads of jurisdiction, attorney and auditor generals, chief prosecutors, among others.

The Judges Conference which was made up of over 150 judges and other judicial personnel came up with its own document- the Rio+20 Declaration on Justice, Governance and Law for Environmental Sustainability.[124] This was a much more concise and focussed document on achieving environmental sustainability through judicial and governance systems. The focus on environmental sustainability is perhaps not surprising considering this was a conference sponsored by UNEP, the primary environment institution of the UN. This in itself is instructive. As earlier noted, the precise ambit of sustainable development is essentially contested and perspectives are coloured by the prism through which the principle is analysed. Part of the challenge of environmental sustainability within the investment regime is arguably that adjudicators view the issues from the viewpoint of international economic law which establishes these arbitral mechanisms. In this context, the subjection of environmental norms under sustainable development to economic norms in an investment law regime can be understood. It also supports the case for more "impartial" dispute resolution systems at the international level which are not biased in favour of the norms of international economic law.

This finds support in the Declaration of the Judges conference which recognises the pivotal role of adjudicators in developing and promoting environmental sustainability in both the preamble and text. It provides *inter alia* that the '*Judiciary…has been the guarantor of the rule of law in the field of the environment worldwide and that judicial independence is indispensable for the dispensation of environmental justice…'*; and furthermore'*…a rich corpus of [judicial] decisions … [has had] a lasting effect on improving social justice, environmental governance and the further development of environmental law*'. Importantly, it recognises the need for *"effective dispute settlement systems"* not only at the national level, but also international as *"[E]nvironmental litigation often transcends national jurisdictions"*. This has resonance for the international investment dispute settlement regime. In its current form, the system is populated by investment arbitrators who are commercial lawyers with understandably limited awareness of the broader implications of environmental issues or indeed environmental norms. For such an adjudicator the impact of investment on endangered species with no apparent immediate implications

124 *Id.*

would have a very different meaning than for a judge in a national environmental tribunal. There is the case therefore of requirements of "greening" a tribunal faced with a dispute involving environmental concerns perhaps by requiring that an environmental lawyer sits as one of the panel members. On a wider level, it raises the question of whether there ought to be an international environment dispute settlement body where environmental sustainability jurisprudence can be developed similar to what has been done in international human rights. Principles and clear developed criteria in such a forum will assist in promoting effective integration of environmental concerns in investment arbitral decisions. Such an arrangement is not too far-fetched and can be envisaged within the context of the Judges' Declarations call for a strengthened role for UNEP *"to effectively lead and advance the global policy and law-making agenda for the environment within the framework of sustainable development"* as part of strengthening the international governance institutions on the global environment.

The Declaration also comes up with a number of principles for advancing environmental sustainability. However, these appear very focussed on national regimes rather than at the international level or non-state mechanisms such as investment tribunals. Considering the importance of these tribunals in the development of sustainable development principles, adopting much broader principles which could be applied within these contexts would have been valuable. This is particularly important in light of the judiciary in some national regimes proactively promoting environmental sustainability even without binding laws. A clear set of principles could sow the seeds for activism to take root even within investment tribunals.

Nevertheless, considering the issue holistically, strengthening national institutions can benefit more effective integration of environmental sustainability in the investment regime. Thus the judges' call for the *"integrity of institutions and decision-makers"* has relevance for the environment-investment disputes. A legal system where environmental laws and regulatory and administrative procedures are not transparent, provides more opportunities for foreign investors, and indeed tribunals to question the purpose of environmental regulations; or claim that the introduction of such regulation was against their legitimate expectation as in the case of FET in foreign investors, whereas, a consistent and transparent environmental regulatory system would provide less basis for such claims.

Moreover, establishing "specific criteria for the interpretation" within environmental laws themselves may influence the thinking of investment tribunals towards interpretations more favourable to the achievement of environmental sustainability.

7. Concluding Remarks

Both the 1992 and 2012 Rio declarations have made an important and distinctive contribution to the principle of environmental sustainability by suggesting that the entrenchment of these environmental norms be done at the international level, through international law and international institutions including the UN, its organs, and institutions of the trade and investment systems.

Although environmental sustainability has been firmly established as an inherent component of sustainable development, its integration in international economic law systems, including investment regime has been slow and uncertain. Rulings from investment tribunals as an example, overwhelmingly demonstrate a tendency to disregard or restrict environmental sustainability norms. Part of the problem is that in the absence of binding legal instruments, the place of these norms within the system is very much a matter of interpretation by arbitrators whose backgrounds and outlook favour prioritisation of investment law norms. Moreover, the case for integration is not furthered by the lack of clear principles for integration of environmental sustainability into the investment regime.

Touted as a missed opportunity to provide a basis for implementation and criteria enforcement for environmental principles, Rio+20 delivered little to fulfill the objectives of the sustainable development which was founded in the 1992 Rio documents. On the other hand, the judges' conference, although focusing more on national schemes for implementation, came up with some broad principles which can act as the first stepping stones.

However the specifics still need to be fleshed out if there is to be any real optimism for better integration of environmental sustainability within investment law through the rulings of tribunals. Moreover, if investment tribunals undergo a good faith interpretation in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose and in reference to 'any relevant rules

of international law applicable in the relations between the parties' must all lead investment tribunals to such holistic, harmonizing and integrative interpretations.[125] Ultimately, integration can only truly be achieved by pursuing a legal regime and implementation structures that focuses on the ways in which the two separate bodies of law can be reconciled and made complementary to the greatest extent possible.

125 Vienna Convention on the Law of Treaties (opened for signature May 23, 1969, came into force on January 27, 1980), 1155 U.N.T.S. 331. Article 31 headlined as the general rules of treaty interpretation states:"*1. A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose. 2. The context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes: (a) any agreement relating to the treaty which was made between all the parties in connexion with the conclusion of the treaty; (b) any instrument which was made by one or more parties in connexion with the conclusion of the treaty and accepted by the other parties as an instrument related to the treaty. 3. There shall be taken into account, together with the context: (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties. 4. A special meaning shall be given to a term if it is established that the parties so intended.*"

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