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Representation and Decision-Making

in Environment Planning with Emphasis on Energy Technologies

Ethics and Climate Change in Asia and the Pacific (ECCAP) Project

Working Group 4 Report

Representation and Decision-Making

in Environment Planning with Emphasis on Energy Technologies

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PREFACE

This report stems from the work of Working Group 4 established under the framework of the Ethics and Energy Technologies in Asia and Pacific project (EETAP), launched in September 2007 by the Regional Unit in Social and Human Sciences in Asia and the Pacific (RUSHSAP) at UNESCO Bangkok. Since 2007 there have been a number of subsequent conferences and working group sessions organized in many different countries. The project adopted the name Ethics and Climate Change in Asia and the Pacific (ECCAP) and has the aim to encourage science and value-based discussions on environmental ethics to produce substantive cross-cultural and multidisciplinary outputs that will be relevant for long-term policy making.

The aim of the ECCAP project is not to formulate universal economic or political plans of how to deal with these issues. Rather, the working groups of the project aim to increase awareness and discussion of the complex ethical dilemmas related to energy and the environment, and to identify scientific data, and available ethical frameworks of values and principles for policy options that have proven useful in facing the challenges in certain communities and countries. The projects are ongoing, and the details of this report that extends the Asia-Pacific Perspectives on Bioethics series, can be found in the Executive Summary. The reports were developed by working groups, whose members participate as individuals in the highest standards of intellectual vigor and integrity, integrating engineers, philosophers, policy makers, experts, youth, and persons of many different cultural backgrounds and experiences. The reports are subject to ongoing open peer review, and the principal authors are listed.

There is ongoing discussion of numerous reports on the yahoo group, unesco_eet@yahoogroups.com, that are in various stages of drafting. For all reports, drafts and outlines of others, and specific requests for further case studies and analyses, please examine the working group webpages which list the members, and the overall website, http://www.unescobkk.org/rushsap/energyethics. The report writers thank all members of the ECCAP project, and in particular WG4 for comments. The WG also welcomes further case studies, and refers readers to related case studies in the other reports of the project. A compilation of case studies is available. Feedback and comments are invited to Dr. Darryl Macer, Regional Advisor in Social and Human Sciences in Asia and the Pacific, Regional Unit in Social and Human Sciences in Asia and the Pacific (RUSHSAP) at UNESCO Bangkok, or email rushsap.bgk@unesco.org

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Executive Summary

Energy use and distribution imposes a significant impact on the world's environment due to the great magnitude and invasive nature of energy-related activities. Concerns initially encompassed a domestic character in the sense that problems associated with extraction of energy resources, transport of energy and noxious emissions from burning of fossil fuels originally affected people on a local scale. These concerns have now amplified to affect the international community as a whole due to the repercussions of energy use and its effects on the global realm, such as climate change and loss of biodiversity.

International environmental regulations have surfaced from the global environmental movement and a shared awareness of the seriousness of the environmental crisis facing our planet and the future of humankind. These environmental regulations were at the outset formulated to apply within the customary structure of inter-state relations. However, a number of regulations are now applied to transboundary jurisprudence, accompanying the transition from isolated environmental laws to the broader concept of a right to a healthy environment. Nation states have an essential task in ensuring that they select efficient energy technologies that are safe for the environment and for the global population.

This report examines the rights of nation states to make decisions on energy technologies for their people, and instances when such decisions pose environmental or security risks to the region. It identifies the government of each nation state as a body entrusted with the duty of administration and management, with the authority to direct and implement laws and policies, including laws and policies concerning energy development and use. These laws and policies should consider both national and international state of affairs, and the interests and concerns of a wide range of stakeholders.

Rights of citizens and local communities with regard to energy infrastructure in their geographic area are depicted with reference to case studies from countries in the Asia-Pacific region (Thailand, Tuvalu, Malaysia, Australia and China). These rights include rights of participation in decision-making, rights to information and rights to justice. The case studies provide information on various policies related to the energy sectors in these countries, and the policy options presented demonstrate that the progression of these rights vary among countries, a situation that might be attributed to the countries' differing stages of development.

1. Rights of Nation States

1.1 Introduction[1]

The state of the environment in this day and age is recognised as a worldwide predicament in need of global address, through the undertaking of a synchronised and integrated approach by the international community.[2] A healthy and clean environment is essential for sustainable development, and can be attained through the efficient use of energy sources. The decision makers in each nation have the important role of ensuring the generation of safe and clean energy in their countries for the greatest benefit of a wide range of stakeholders, which includes those outside the national boundaries.

Governments, as representatives of nation states, possess the means to decide which energy technologies people can choose and/or access. Setting of policy inside countries is the domain of governments through the principle of state sovereignty in international law. However, the rights of governments are constrained by their commitments to various international commitments invoking ethical principles relevant to energy and environmental issues, especially in the event where their decisions give rise to environmental or security risks either within their own nation states or to other nation states. Other stakeholders already have important roles in the process, including the private sector and civil society. However, full representation of the community in decision-making requires the involvement of all groups, and not all countries have managed to ensure that all persons are represented in this process.

Generally speaking, citizens of a nation state have rights in relation to energy infrastructure in their geographic area, and governments are obliged to enforce the rights of their citizens. These rights are endorsed by international declarations as well as by the legislation of most nation states. They include the right of citizen access to information, right to participation in decision-making, and right to justice. Chapter 2 of this report, in relation to Thailand, examines the constitutional aspects and provisions for public interest litigation, as well as participatory rights and access to information in the country. Chapters 4 and 5 of the report examine issues raised by indigenous groups in Australia and Malaysia, and chapter 6 examines the issues of rural communities in China, as well as the international dimensions of development choices. This chapter provides a general introduction to legal principles and processes, but more specific examples are given in each chapter.

1.2 Principle of State Sovereignty

The concept of government refers to a set of institutions involving a group of actors who shape and direct public affairs within society, while maintaining public order. A government has the functions of administrating the state, regulating public affairs, decision-making, implementing policies and exercising leadership. The structure of government and its policy performance is able to affect the welfare quality of a society and its population.[3] The authority vested in the governments of nation states can be attributed to the principle of state sovereignty. The principle of state sovereignty is a concept embraced by international law. The Charter of the United Nations, by virtue of Article 2.1, provides that:

"*The Organisation is based on the principle of the sovereign equality of all its Members.*"

Sovereignty is defined as:

"*The supreme, absolute, and uncontrollable power by which any independent state is governed; supreme political authority; paramount control of the constitution and frame of government and its administration; the self-sufficient source of political power, from which all specific political powers are derived; the international independence of a state, combined with the right and power of regulating its internal affairs without foreign dictation; also a political society, or state, which is sovereign and independent.*"[4]

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1 This Chapter is written by Ms. Raine Boonlong.

2 Department of Trade and Industry. *Energy - Its Impact on the Environment and Society*, p. 2.

3 Keman, Hans. *Structure of Government*, http://www.eolss.net

4 *Black's Law Dictionary (Sixth Edition).*

The sovereignty principle dictates that a nation state has absolute jurisdiction within its territory,[5] and is free to exercise this jurisdiction without intervention from other nation states. In many senses, the principle of state sovereignty bestows upon the government of each nation state the authority to govern its citizens. Accordingly, the governments of nation states possess the rights to decide on energy technologies for its people.

The notion of state sovereignty over energy resources is stated in Article 18(1) of the Energy Charter Treaty of 1994 which reads:

"*The Contracting Parties recognize state sovereignty and sovereign rights over energy resources. They affirm that these must be* **exercised in accordance with and subject to the rules of international law.**"[6]

In particular, *environmental law* brings about challenges to the principle of State sovereignty and restrictions to the rights of sovereignty of states. The complex linkage of the world's environment means that destruction to the environment in one nation state may result in adverse effects of the environment in another nation state.[7]

If there were no limits to the principle of State sovereignty, the world would be presented with a dilemma where countries would be eager to externalise internal effects. Not only would pollution-causing activities be located in a way that allows for negative impacts to occur outside each country's jurisdiction, it would also be acceptable for one country to divert a river in order to stop its flow into a neighbouring country.[8]

1.3 Limits to the Principle of State Sovereignty

International environmental law has been developed to encompass an extensive range of multilateral treaties, bilateral treaties and numerous instruments of intergovernmental organisations that have been espoused in the form of declarations, programmes of action and resolutions.

The Declaration of the UN Conference on the Environment of 1972 (Stockholm Declaration) presents a set of principles whose underlying fundamentals are recognised by the global community. It proclaims that:

"*Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. Both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights; even the right to life itself.*"

The Stockholm Declaration is generally recognised as the preliminary point of an approach embracing a rights-based perception to environmental protection, affirming the intimate relationship between the environment and human rights. The degradation of the environment adversely affects the enjoyment of human rights, including the right to life, health, participation and the right to development. The matter of environmental protection and enhancement is portrayed by the Declaration as *"a major issue which affects the well-being of peoples and economic development throughout the world… and the duty of all Governments"*. The Declaration also acknowledges that:

"*To defend and improve the human environment for present and future generations has become an imperative goal for mankind - a goal to be pursed together with …the achievement of the goals of peace and development*".

5 This report does not discuss the moves in international law to intervene in states when there is evidence of serious breaches of human rights. It also does not discuss situations of inter-state conflict beyond legal measures, noting that there have been concerns expressed that the environmental crisis may lead to inter-state conflicts.

6 Bold text added for emphasis.

7 Calster, Geert Van, *International Law and Sovereignty in the Age of Globalization,* http://greenplanet.eolss.net

8 Lee, Leo-Felix, *Sovereignty over, Ownership of, and Access to Natural Resources,* http://greenplanet.eolss.net; Refer to ECCAP WG14 report.

In essence, governments possess the sovereign right to manage and deal with their states' environment and natural resources, whilst having a duty to protect the environment for its own citizens as well as citizens of other states.

The prevailing rule as to environmental law violations developed from the *Trail Smelter Arbitration (US v. Canada)* (3 United Nations Reports of International Arbitral Awards 1905, 1907 (1949)). This classic case which forms the cornerstone of modern environmental law involved the smelting of lead and zinc in a plant located in Canada, which resulted in sulphur dioxide emissions reaching the territory of United States where significant damage was caused to American farmers. The Tribunal proposed a rule, now considered recognised as customary international law, which provided that:

" *...no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence*."

The United Nations World Charter for Nature supports this rule by stating under Principle 21(d) that:

"*States...shall...ensure that activities within their jurisdictions or control do not cause damage to the natural systems located within other States or in the areas beyond the limits of national jurisdiction.*"

The limitation to the principle of State sovereignty is also explicit in Principle 21 of the Stockholm Declaration, which states:

"*States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.*"

The conception of the international responsibility of States expressed by this principle amounts to a restriction of State sovereignty, which is also existent in Principle 12 of the decision adopted on 19 May 1978 by the Governing Council of the United Nations Environment Programme concerning shared natural resources. It is also present in the provisions of the Charter of Economic Rights and Duties of States, General Assembly resolution 3281 (XXIX) of 12 December 1974, which affirms the sovereign right of States over their wealth and natural resources while emphasising their responsibility to safeguard and conserve the environment for present and future generations.

Principle 2 of the Rio Declaration on Environment and Development (the Rio Declaration of 1992) is also noteworthy in that is identical with Principle 21 of the Stockholm Declaration, apart from two added words:

"States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction."

In essence, international law stipulates that nation states have rights to decide on energy technologies for their people, *unless the decisions result in harm to the people or damage to the environment of other nation states*. It comprises a concept of limited territorial sovereignty which is an analogue of the Roman law *maxim sic utere tuo ut alienum non laedas*, meaning use your property so as not to injure that of another.

Furthermore, the Convention on Long-range Transboundary Air Pollution 1979, which has established a regional regime in Europe and North America, aims to limit and prevent long-range transboundary air pollution. Although, nation states of the Asia-Pacific are not members of this convention, its importance and influence should be embraced by all nation states of the world.

The next issue to be examined is the rights of Nation States to decide on energy technologies for their people when such decisions may pose an environmental or security risk to its own people, and how the precautionary principle acts as a limitation to the principle of State sovereignty in this respect.

1.4 The Precautionary Principle

The precautionary principle constitutes one of the ethical principles that form the foundation of environmental protection, and was first defined as a principle of international environmental policy in 1987 with the Second North Sea Treaty:

"*Accepting that, in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence.*"[9]

Since then, the precautionary principle has become intrinsic to international environmental policy especially with the adoption of the Rio Declaration at the UN Conference on Environment and Development (UNCED) in 1992, also known as the Earth Summit. The Earth Summit discussed the principal themes of environment and sustainable development, and resulted in the formation of five environmental documents advocating for the application of sustainable development, namely, Agenda 21, the Rio Declaration, the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity and the Statement of Forest Principles.[10]

The working definition of the precautionary principle is as follows:

"*When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. Morally unacceptable harm refers to harm to humans or the environment that is:*

- *threatening to human life or health, or*
- *serious and effectively irreversible, or*
- *inequitable to present or future generations, or*
- *imposed without adequate consideration of the human rights of those affected.*"[11]

The precautionary principle can be understood as an approach used to deal with scientific uncertainties in the evaluation and management of risks. It comprises a "look before you leap" perception, and is applied to avert possible hazard to human health and damage to the environment. The precautionary principle is extensively used in environmental law, and is strongly endorsed by Principle 15 of the Rio Declaration which states:

"*In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*"

Article 3.3 of the United Nations Framework Convention on Climate Change of 1992 (UNFCCC) also stipulates that member states should take precautionary measures to combat the causes of climate change and its adverse effects. It states:

"*Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.*"

The Earth Charter, a declaration of fundamental ethical principles for building a just, sustainable and peaceful global society, also stipulates the application of a precautionary approach in Principle 6 in order to prevent harm to the environment when knowledge is limited. The Earth Charter has not been endorsed by the United Nations although it began as a United Nations initiative. The document has been endorsed by over 4,500 organisations, including many governments and international organisations, as is considered as morally binding.[12]

9 Tickner, Joel. *The Precautionary Principle in Sustainable Environmental Management,* http://greenplanet.eolss.net

10 Refer to ECCAP WG1 report for a discussion of the ethical principles in major UN instruments relating to the environment.

11 UNESCO. 2003. *The Precautionary Principle*. Paris, COMEST, UNESCO, p. 14.

12 The Earth Charter Initiative. 2009. www.earthcharterinaction.org (Accessed 10 May 2009).

The precautionary principle is not a legally binding principle, but this does not mean that it does not possess legal relevance. The precautionary principle has attained a wide degree of recognition, with the realisations that firstly, science is incapable of fully counteracting complex causes of environmental degradation; secondly, governments are responsible to protect citizens from uncertain harm; and thirdly, values and judgment are an essential part of decision-making processes. The principle is now legitimately capable of generating an international norm, and is found in declarations, resolutions and guidelines enacted in different international settings. It stems from the basis that public policies should safeguard populations and ecosystems from environmental deterioration, and accepts that science is not always adequate to provide the answers required for the protection of health and the environment. Decision-makers have the duty of bridging the gap between the indeterminancy of science and the political need to actively prevent harm. Government agencies, acting as trustees of ecosystem and public health, should be committed to preventing harm, and upon failure to do so, must shoulder significant social and environmental ramifications.[13]

Many countries in the Asia-Pacific region have demonstrated support for the application of the precautionary principle, and courts in the region are progressively more inclined to embrace the principle as a method of handling scientific ambiguity in environmental disputes. In the Australian case of *Leatch v. National Parks and Wildlife Service,*[14] a third party objector challenged the issuance of a licence to a local council to eliminate endangered fauna for the construction of a road, and argued for the precautionary principle to be applied. The New South Wales Land and Environment Court declined the granting of the licence, holding that "*the precautionary principle is a statement of common sense and has already been applied by decision-makers in appropriate circumstances prior to the principle being spelt out*".

In *AP Pollution Control Board v. Nayudu,*[15] an Indian case, a petition was signed to oppose the development of hazardous industries. The Indian Supreme Court invoked the precautionary principle, holding that:

"...it is necessary that the party attempting to preserve the status quo by maintaining a less-polluted state should not carry the burden or proof and the party, who wants to alter it, must bear this burden".

1.5 Precautionary Principle as a Limitation to State Sovereignty

In situations where the state's activities may cause harm to its population or environment, the precautionary principle requires for states to undertake measures to avoid these activities. This means that states are unable to use their right of sovereignty as a defence to pursue activities *within their jurisdiction* which might be detrimental to their people or the environment.

Although states possesses the right to decide on energy technologies for their people under the principle of state sovereignty, states must still bear in mind the precautionary principle which stipulates that if a particular state's decisions were to cause irreversible damage to the people or the environment, that state should ensure that effective measures be implemented in order to prevent environmental degradation or threats to human life even if the full extent of the harm has not been established scientifically.

In this sense, the precautionary principle can be considered a constraint on the principle of state sovereignty, as the state does not have the autonomy to carry out activities that present a threat of serious or irreversible damage to the environment and human life.

1.6 Sustainable Development

The precautionary principle is a fundamental concept to the principle of sustainable development, which is defined as "development that meets the needs of the present without compromising the

13 Tickner, Joel. 1999. *The Precautionary Principle in Sustainable Environmental Management,* http://greenplanet.eolss.net

14 Local Government. 1993. *Local Government and Environment Reports 270.*

15 *Supreme Court of India.* SOL Case No. 53, 27 January 1999 (unreported).

abilities of future generations to meet their needs".[16] Agenda 21, one of the five documents agreed during the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro 1992, was formulated to promote and accelerate the worldwide application of the values of sustainable development. Principle 3 of the Rio Declaration calls for sustainable development by stating: "*The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations*". According to Article 3 of the UNFCCC in relation to combating climate change, "*Parties have a right to, and should, promote sustainable development*". Also, Principle 3 of the Earth Charter calls upon countries to "build democratic societies that are just, participatory, sustainable and peaceful".

The importance of sustainable development was accentuated at the Johannesburg Summit 2002-the World Summit on Sustainable Development. This Summit presented leaders of nation states with an opportunity to espouse tangible solutions and set attainable targets for better executing Agenda 21, considered as the wide-ranging blueprint for action to achieve sustainable development on a global scale.

The pursuance of sustainable development can be implemented by the promotion of alternative energy sources, and the protection of natural resources. Sustainable development demands equity; it concerns an ethical orientation that will inevitably bring about social and economic implications. Equity and fairness is essential during decision-making processes, and also in the outcomes of decision-making.[17] Currently, many developing nations lack the financial and technological expedients to attain sustainable development. The Asia-Pacific region is among the world's most diverse regions and consists of many communities that are at risks of facing the ruinous consequences of climate change and effects from the consumption of fossil fuels.[18]

The region is marked by great distances and remoteness between communities, especially in the Pacific and in rural areas of Asian countries, yet also by densely populated cities in countries like China, Japan, India and Indonesia. The developing countries of the Asia-Pacific region are experiencing economic growth, industrialisation and growing population which requires an enormous increase in energy consumption, whilst global environmental problems present a demand for reduced use of fossil fuels. The use of renewable energy technologies is considered by many writers to be the desired method of attaining the rising energy needs under environmental restraints. Both the UNFCCC and the Kyoto Protocol stipulate that countries should direct their efforts to improve efficiency of energy conversion devices, and to promote effective use of clean and environmentally friendly renewable source of energy to control the level of greenhouse gas emissions in order to achieve sustainable development.[19]

Several countries in the Asia-Pacific region have undertaken steps to promote the use of renewable energy. Wind generators, hydro turbines, and biomass gasifiers are some of the renewable energy technologies used to provide energy. Countries like India, China, Sri Lanka, Thailand, Malaysia, Philippines and Viet Nam have generated energy using wind power and hydro power, and operated solar photovoltaic technology. A wide range of renewable energy technologies do subsist in Asia-Pacific however, the standard of progression across the region is disparate and the contribution to total energy supply in the region is considerably small.[20]

However, choice of energy technology raises a number of questions for the governance of society. The emergence of policy requires adequate representation of citizens' concerns, and the concerns of a wide range of stakeholders. Some critics of government have claimed that current energy policies and projects in the region are characterised by a lack of consideration for local and global sustainability. The sustainable utilisation of energy resources requires governments to construct appropriate policies and rules such that policy makers should fully comprehend both national and international state of affairs

16 Above note 4, p. 8.

17 Refer to ECCAP WG7 report.

18 World Council for Renewable Energy, *Asia Pacific Renewable Energy and Sustainable Development Agenda 2004,* http://www.gdrc.org/uem/energy/renewable-energy-agenda-2004.htm

19 Abdullah, Kamaruddin. *Renewable Energy Conversion and Utilization in ASEAN Countries,* p. 119.

20 Bhattacharya, S. C and Kumar, S. *Renewable Energy in Asia: A Technology and Policy Review.*

surrounding the resources before establishing any policy. Policies should take into account the country's short and long-term interests in utilisation of resources, and be able to efficiently administer actions undertaken by governments, corporations and institutions, as well as ensure protection of individuals and ecosystems on a national and global level.[21]

The developing nations in the region continue to struggle with fossil-fuel induced pollution, one of the consequences of an accelerated urban economy. Energy efficiency is vital for achieving energy and environmental sustainability, and needs to be implemented by rigorous governmental policies and actions.

The following chapters of this report will examine the implementation of selected energy projects and the related regulations in one of the developing nations in Asia-Pacific, namely Thailand, where the government has been alleged to have a preference for coal-fired generation.[22]

21 Qiu, Tong, Strategies for Rational Use of Natural Resources. http://greenplanet.eolss.net

22 Cogeneration and On-Site Power Production. 2007. An Emerging Light: Thailand Gives the Go-Ahead to Distributed Energy, p. 65.

2. Energy Issues in Thailand

2.1 Introduction

Thailand, a developing nation in the Asia-Pacific region, is the focus of this chapter.[23] The Thai government and its related energy state enterprises possess the main authority in making decisions with regards to energy technologies in Thailand. The government also has the duty to comply with international ethical guidelines on the precautionary approach and sustainable development, as well as with its domestic legislation and policies. There have been allegations that some of the Thai government's decisions in relation to its choice of energy have resulted in instances of environmental degradation, as well as harm to the human population and other living organisms. This will be examined through the analysis of two Thai case studies.

The Kingdom of Thailand is a middle-income developing country situated in Southeast Asia, it was founded in the mid-14th century and was known as Siam until 1939. Thailand is located in the Southeast Asian region, and is the only Southeast Asian country that has never been ruled by a European colonial power. It is a constitutional monarchy, with His Majesty King Bhumibol Adulyadej as the Head of State, and Prime Minister Abhisit Vejajiva as the Head of Government.

Thailand's total land area amounts to 513,120 km^2, and it shares boundaries with Myanmar in the West and Northwest, Lao PDR in the East and Northeast, Cambodia in the Southeast and Malaysia in the South. The six geographical regions constituting Thailand are:

- Northern Thailand;
- Northeastern Thailand;
- Western Thailand;
- Central Thailand;
- Eastern Thailand; and
- Southern Thailand.

The estimated population of Thailand as of July 2009 is 63,396,000, with 22,899,000 residing in urban areas and 40,497,000 residing in rural areas. Bangkok, as the capital of the country, has a population of 6,720,000. The population of ethnic minorities is relatively low and consists of Muslim Malays in the South, Khmer minority in the East and the hill tribes in the North and West.[24]

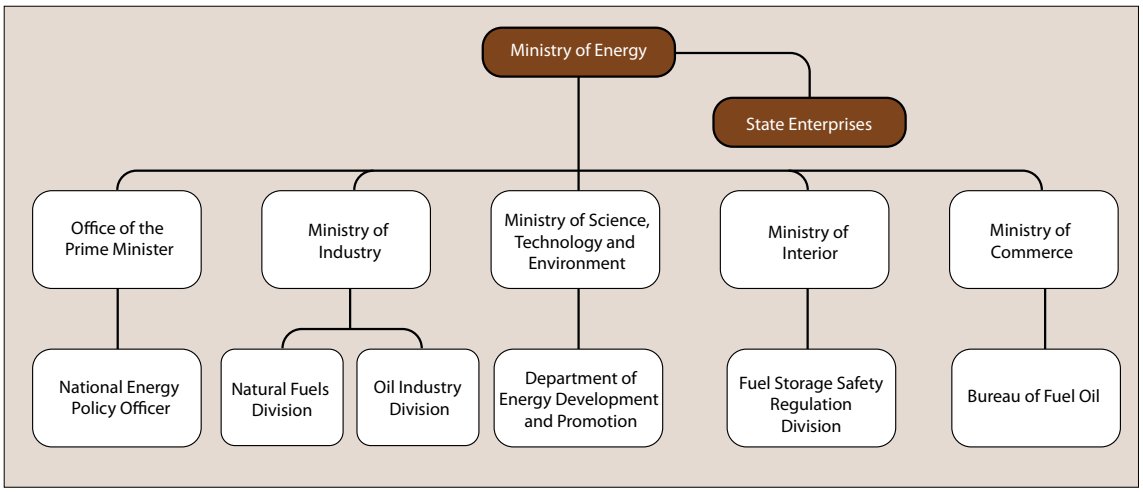
2.2 Decision-Makers Involved in the Energy Sector in Thailand

In Thailand, as in most nations of the world, the main power to make decisions with regards administrative and political matters including matters of energy lies with the government, who acts as the representative of the nation, as well as with state energy enterprises. Before 1992, Thailand's energy-related organisations were categorised into separate ministries and departments. Some of these organisations were supervised by government agencies, whereas others were established as state enterprises. For instance, the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA), being public electricity providers of local provinces, were supervised by the Ministry of Interior; whereas the Electricity Generating Authority of Thailand (EGAT) was supervised by the Office of the Prime Minister. The government learned that this categorisation was administratively inefficient, and contemplated the need for these energy-related organisations to be managed by a single office, hence, the *Prime Minister's Direction B.E 2535* (1992) was enacted to form the National Energy Policy Office to undertake the duty of ascertaining consistency and efficiency in relation to energy matters of the state.

23 This Chapter is written by Ms. Raine Boonlong.

24 Europa World Plus. *Thailand*. http://www.europaworld.com/entry?id-th&go_country-GO

Figure 1: Decision-Making Agencies Connected to the Ministry of Energy in Thailand



Nevertheless, the National Energy Policy Office at that time consisted of more than 20 governmental agencies across 9 ministries, and still served as an obstruction to efficient operation of the energy sector due to conflicting policies and legislations of each agency. In 2002, following a bureaucratic reform of the Thai government under former Prime Minister Thaksin Shinawatra, a Ministry of Energy was established to unify all energy-related government agencies and state enterprises. All authority regarding energy matters was then conferred to the Ministry of Energy.

The Ministry of Energy currently comprises the following agencies and enterprises:

- National Energy Policy Office (since named Energy Policy and Planning Office), Office of the Prime Minister;
- Natural Fuels Division, Analysis Division (Natural Fuels Analysis), Department of Mineral Resources, and Oil Industry Division, Office of the Permanent Secretary, Ministry of Industry;
- Department of Energy Development and Promotion, Ministry of Science, Technology and Environment;
- Fuel Storage Safety Regulation Division, Department of Public Works, Ministry of Interior;
- Bureau of Fuel Oil, Department of Commercial Registration, Ministry of Commerce;
- Metropolitan Electricity Authority (MEA), a state enterprise under the Ministry of Interior involved with distribution of energy in Bangkok;
- Provincial Electricity Authority (PEA) a state enterprise under the Ministry of Interior involved with distribution of energy for the country outside of Bangkok;
- Electricity Generating Authority of Thailand (EGAT), a state enterprise in charge of generation and transmission, and sells wholesale power to MEA and PEA;
- PTT Public Company Limited, a natural gas and oil state enterprise with the Ministry of Finance being the majority shareholder; and
- Bangchak Petroleum Public Company Limited, an oil state enterprise.[25]

2.3 Thailand's Energy Supply

In the 1970s, the Thai government began to increase the level of electrification throughout the state as part of its campaign to equip Thai citizens with basic services. The construction of gridline electricity extensions along with road networks permitted the state to better monitor its people. Thailand currently faces imperative challenges with regards to its energy supply. Thailand's natural energy resources are diminishing at a rapid rate, whilst energy demand in Thailand is forecasted to double every ten years, rendering it progressively more difficult for Thailand to generate sufficient energy to stimulate its economy.

25 Ministry of Energy. *EPPO: Energy Policy and Planning Office*. www.eppo.go.th

The energy intensity (ratio of energy consumption to Gross Domestic Product) of Thailand amounts to a numerical value of approximately 1.4, as opposed to approximately 0.8 for more developed countries. This has resulted in the emergence of concerns regarding energy security in the near future, and has led to Thailand's growing reliance on inexpensive and reliable energy sources from neighbouring countries such as Lao PDR, Cambodia and Myanmar. Currently, Thailand is importing about 63 per cent of its commercial energy demand.[26] The Thai government's alleged preference for coal-fired generation poses a dilemma as coal is the fuel most opposed by local communities, and from an international perspective, coal is problematical due to its role in contributing towards global climate change.

Thailand's energy segment is presently struggling with conflicting policies. On one hand, the country has developed policies to promote clean, decentralised energy; on the other hand it has existing plans to increase its reliance on numerous fossil-fuel power plants that contribute to pollution problems and climate change. Thailand was the first developing country to implement net metering regulations in 2002, which are locally referred to as Very Small Power Producer Program. This program permits interconnection arrangements for small renewable energy generators up to ten megawatt in size. In 2003, the government set a goal for eight per cent of all commercial to be derived from renewable energy, and has acknowledged the need to improve energy efficiency. Nonetheless, centralised large-scale power plants remain the favoured form of energy provider for the Thai government. This preference is partly due to Thailand's propensity to overestimate future electricity demands.

Figure 2: Elements of related State Enterprises in Thailand

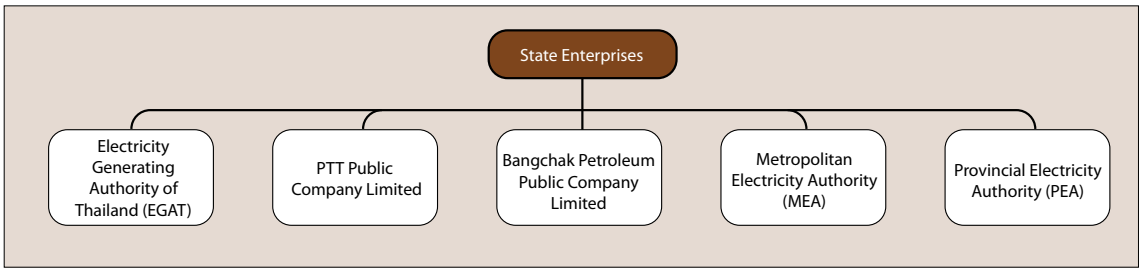


Table 1: Subsidiary Entities of State Enterprises in Thailand

EGAT	PTT Public Company Limited
• Electricity Generating Public Company Limited (EGCO) • Ratchaburi Electricity Generating Holding Public Company Limited - Ratchaburi Electricity Generating Company Limited - Ratchaburi Energy Company Limited - Ratchaburi Gas Company Limited - Ratch Udom Power Company Limited - Ratchaburi Alliances Company Limited	• PTT Retail Business Company Limited • Combined Heat and Power Producing Company Limited • PTT International Company Limited • PTT Green Energy Private Limited

Most electricity demand forecasts have proven to be inaccurate. Electricity demand forecasts are prepared by the Thai Load Forecast Committee 'behind closed doors', which bases its estimations on economic growth forecasts provided by a research institute funded by state electrical enterprises.[27] The overestimations of energy demand have resulted in a false sense of pressure upon the government to construct more power plants, ensuing in overinvestment – the expenses of which are borne by consumers. Interestingly enough, energy utilities are actually induced to overestimate energy demand. The profits of these utilities are established in accordance with a "cost plus" structure, which means that

26 The World Bank. *Thailand and Energy*. http://www.worldbank.or.th

27 World Rivers Review. *Decentralized Energy in Thailand: An Emerging Light,* p. 4.

their profits are predetermined by the government to be equivalent to a certain percentage of their total expenditure. This structure acts as an impetus for utilities to invest heavily in energy infrastructure. Accordingly, this structure takes away the energy state enterprise – Electricity Generating Authority of Thailand's (EGAT) incentive to promote energy efficiency because EGAT will receive lesser profits when consumers save energy. State utilities are currently self-regulating, and there is no independent regulatory authority to oversee the conduct of state utilities.[28]

Like many other countries in the Asia-Pacific, Thailand is currently experiencing a series of environmental problems consisting of deforestation, declining wildlife population, loss of natural habitats, depleting natural resources, and severe air and water pollution. These environmental quandaries can be attributed to the country's rapid industrialisation, urbanisation and accelerated agricultural production. Within this context, this report will examine two major energy production projects in Thailand which have contributed to the pollution dilemma in the country:

- The Mae Moh coal-fired power plant; and
- The Map Ta Phut Industrial Estate.

These cases will demonstrate the injurious effects of the Thai government's decision with regards to energy technologies on the local population and environment, and the government's consistency (or inconsistency) with both domestic and international guidelines on the environment and energy.

2.4 Case Study of Mae Moh Power Plant, Lampang

The Mae Moh coal-fired power plant is located in the mountains of the Mae Moh district in Lampang province, Northern Thailand. The fuel source of the power plant is a lignite coal mine occupying an area of 135 km^2, and is located near the plant itself. The plant consists of 13 generating units and has a capacity of 2,625 Megawatts, and is owned and managed by the Electricity Generating Authority of Thailand (EGAT). The power plant aims to meet the electricity demand in Bangkok and rural provinces. It provided 12 per cent of Thailand's electricity and until 2008, it has been the largest coal-fired power plant in Southeast Asia. EGAT has termed the plant as a successful project as its objectives of 'least-cost nature, system loss reduction and system stability and reliability' have been accomplished.

The power plant received funding from various sources, including the Asian Development Bank, Export Development Canada, and the US Export-Import Bank. The plant underwent expansion in the 1980s, and expels approximately 1.6 million tons of sulfur gas each year. The emissions have caused immense damage to the local residents and the environment.[29]

2.4.1 Effects of the Mae Moh Power Plant

The power plant's expansion in the 1980s has resulted in it being in closer proximity to the local villages. A total of sixteen communities reside near the Mae Moh power plant. Notably, it is only 800 metres away from one village. Since the operation of the Mae Moh Power Plant, more than 30,000 villagers have been compelled to relocate, and many thousands have suffered from severe respiratory problems due to the inhalation of and exposure to sulfur dioxide and other toxic chemicals emitted from the power plant. Sulfur gas has scorched rice fields and polluted water sources of the Mae Moh region and that of nearby communities. Communities claimed that the wind brought coal mine dust into their homes and farms and that the power plant did not have proper filters.

A study undertaken by Greenpeace Research Laboratories demonstrated that the power plant produced 4.3 million tons of fly ash every year. Fly ash is found to contain concentrations of inorganic mercury, which can be transformed into organic mercury by micro-organisms in soils and marine sediments. Inorganic mercury such as methyl mercury is extremely dangerous to living things and the environment.

28 *Ibid.*

29 Greenpeace. *Coal Plant Dossier- An ADB Skeleton in the Closet: Mae Moh,* p. 5.

On 3 October 1992, EGAT operated 11 units of the Mae Moh power plant which led to more than a thousand villagers dwelling within 7 km of the plant to suffer from breathing problems, nausea, dizziness and inflammation of the eyes and nasal cavities. Half the rice fields were destroyed by acid rain and within two months after the incident, approximately 42,000 villagers suffered from inhalation difficulties. In April and May of 1996, communities alleged that the pollution caused by the power plant caused six villagers to die of blood poisoning. In 1998, mobile clinics determined that out of 8,214 patients, 3,463 suffered from respiratory diseases.

In 2003, the State Natural Resources and Environmental Policy and Planning Office detected high concentrations of arsenic, chromium and manganese in water sources located near the plant, most likely due to chemicals leaking from the plant downhill into water sources.

Since the plant's operation, there have been more than 200 respiratory-related deaths. Nevertheless, EGAT remained adamant that the power plant emissions were lower than the level stipulated by the National Environment Board, and that the emissions were not dangerous for the people and the environment.

In an attempt to counter the problems caused by the power plant's pollution, local activist Maliwan Najwirot organized the Network of Occupational Health Sufferers of Thailand in 2002 with the aim of assisting those negatively affected by the operations of the plant.[30]

2.4.2 Villagers' Lawsuit against EGAT

According to the local communities, the government persisted in granting permits to expand the power plant despite the negative impacts to the people and the environment, and had neglected to notify the stakeholders of the hazards associated with the power plant. The communities made complaints to public relations officials and to financiers of the power plant but the parties were unresponsive and their communities' concerns failed to be adequately addressed.

The local residents of Mae Moh resorted to lawsuit for remedy, and started a legal battle against EGAT since 2003. From 2003 to 2005, lawsuits against EGAT were filed by 437 residents in the affected area. The residents claimed that the power plant used low-quality lignite in its production of electricity and neglected to treat the smoke before emitting it. They claimed damages for health decline, physical and mental grievances, and compensation for medical expenditures and destruction of farm crops.[31]

2.4.3 The Court's Decision

EGAT's Deputy Governor Wirat Kanjan has claimed that EGAT had established procedures to solve the pollution problem arising from the power plant, assisted the local residents, and adhered to environmental law. Despite his claims, in May 2004, EGAT was ordered by the Thai provincial court to compensate approximately 5.7 million Baht (US$ 142,500) to villagers for crops destroyed by the power plant.

Consequently, on 4 March 2009, the Chiang Mai provincial administrative court made a landmark decision in response to 35 lawsuits filed by residents in 2004 with assistance from the Council of Work and Environment Related Patient Network of Thailand (WEPT). The court required for EGAT to compensate 130 Mae Moh villagers who had suffered severe health distress due to the toxic emissions originating from the lignite-fired power plant.

The court considered an air-quality report by the Pollution Control Department dated November 1992 to August 1998 which proved that the level of sulphur dioxide emitted by the power plant exceeded the legal standards permitted. EGAT also admitted that in August 17-18 1998, only two out of ten devices to treat sulphur dioxide were effective, ensuing in the illness of 868 local residents.

30 *Ibid.*

31 The Nation. *EGAT Loses Lampang Pollution Case.* http://www.nationmultimedia.com/search/read.php?newsid=30097191&keyword=Egat

In essence, the court held that the power plant's emissions of sulphur dioxide exceeded the legal limit and adversely affected the villagers. The court ordered that EGAT rehabilitate the environment at the power plant, and required for EGAT to pay an approximate sum of 246,900 Baht (US$ 7,000) per family. It also ordered that EGAT arranged for the relocation of 400 affected families to areas at least 5 km away from the power plant, and to provide each family with house and farmland. EGAT was also required by the court to submit an Environmental Impact Assessment report to the Office of Natural Resources and Environmental Policy and Planning. The group Network of Patients' Rights Against Mae Moh Toxic Emissions expressed approval of the court's landmark decision regarding the compensation. They expressed that the court's decision provided the much needed justice that the affected villagers deserved, and the ability for them to reconstruct their lives.[32]

2.5 Case Study of Map Ta Phut Industrial Estate, Rayong

The Map Ta Phut Industrial Estate is located in the Rayong province, and is one of the 29 industrial estates in Thailand. It was developed in 1989 by state enterprises, under the management of the Industrial Estate Authority of Thailand (IEAT) and the Ministry of Industry. It is one of 29 estates in Thailand Map Ta Phut Industrial Estate began operation in 1990 and occupies a land area of 2,768 acres. The estate consists of 117 industrial plants which include 45 petrochemical factories, eight coal-fired power plants, 12 chemical fertilizer factories and two oil refineries.

2.5.1 Effects of the Map Ta Phut Industrial Estate

24,668 residents from 25 communities surrounding the Map Ta Phut municipality have been adversely affected by industrial pollution released by Map Ta Phut Industrial Estate.

The pollution suffered by Map Ta Phut Panphittayakarn School was brought to public attention in 1997. Around 1,000 pupils and teachers suffered from illnesses after inhaling the toxic emissions from plants and factories located at the Map Ta Phut Industrial Estate, and had to be hospitalised for breathing difficulties, headaches, nasal irritation and nausea. In 2005, the Ministry of Education approved of the school's relocation to a site 5 km away from the original compound.

A test carried out in 2005 by US-based Global Community Monitor (GCM) environmental organisation demonstrated that airborne cancerous toxic chemicals such as benzene, vinyl chloride and chloroform released by Map Ta Phut Industrial Estate exceeded safety standards of developed nations by 60 to 3,000 times. These toxic chemicals are known to cause cancer, birth defects and other severe illnesses. In 2007, health assessments conducted on 2,177 Map Ta Phut residents between June and August depicted that 329 of them had unusually high levels of benzene. The level of two airborne polluters namely, nitrogen dioxide and sulphur dioxide were 200 to 500 times of the legally permitted standards per year.

Water resources in the area surrounding the estate were found to be contaminated with metallic constituents. Testing of water samples obtained from 25 public ponds in the Map Ta Phut municipality indicated the existence of hazardous levels of toxic substances. Cadmium was 6 times the safety level, zinc 10 times, manganese 34 times, lead 47 times and iron 151 times.[33]

2.5.2 Villager's Lawsuit against National Environmental Board (NEB)

27 villagers from 11 communities surrounding the Map Ta Phut Industrial Estate brought a case against the National Environmental Board (NEB) in October 2007. The NEB currently consists of the Prime Minister Abhisit Vejajiva as board chairman, Deputy Prime Minister Suthep Thaugsuban as a member, and Natural Resources and Environment Minister Suwit Khunkitti as vice-chairman.[34] Under Article 13 of

32 *Ibid.*

33 Bangkok Post. *NEB Won't Appeal Map Ta Phut Ruling,* http://www.bangkokpost.com/news/local/13429/map-ta-phut-row-comes-to-head

34 *Ibid.*

the *Enhancement and Conservation of National Environmental Quality Act B.E 2535* (1992) ("*Environment Act*"), some of the powers and duties of the NEB are:

- To submit policy and plan for enhancement and conservation of national environmental quality;
- To prescribe environmental quality standards;
- To supervise the enactment of regulations and laws relating to enhancement and conservation of environmental quality; and
- To give approval to plans such as the Environmental Quality Management Plan and the Changwat Action Plan for environmental quality management.

The villagers claimed that the NEB was negligent in failing to designate the area as a pollution control area in compliance with Article 59 of the *Environment Act*. A pollution control area refers to an area devoid of toxic chemicals beyond the legal limits. According to Article 59:

"*In case it appears that any locality is affected by pollution problems and there is a tendency that such problems may be aggravated to cause health hazards to the public or adverse impact on the environmental quality, the National Environmental Board shall have power to publish notification in the Government Gazette designating such locality as a pollution control area in order to control, reduce and eliminate pollution.*"

Surachai Trongngam, a lawyer of the non-profit legal group Enlaw representing the villagers affirmed that the case was lodged in order to protect the rights of villages who were affected by the poisonous emissions released from the plants in the estate.

2.5.3 The Court's Decision

On 3 March 2009, the Rayong provincial administrative court found that the NEB had breached Article 59 of the *Environment Act* by failing to designate the Map Ta Phut municipality as a 'pollution control area'. The court ordered that the NEB cleaned up the polluted industries within Map Ta Phut Industrial Estate, and to declare the areas around the estate a 'pollution control area' within a timeframe of 60 days. The areas to be declared pollution control zones consist of the whole Map Ta Phut municipality which includes tambon Nern Phra, tambon Map Kha, tambon Thap Ma of Muang district and tambon Ban Chang of Ban Chang district.[35] According to Thailand's *Environment Act,* pollution control areas require state agencies and involved parties to urgently alleviate the pollution problems by controlling, reducing and eliminating toxic waste in accordance with the *Environment Act*.

In its ruling, the court relied on a report provided by the Pollution Control Department stipulating that the air in Map Ta Phut Estate contained 40 volatile organic compounds, 20 of these compounds being carcinogenic. 19 of these carcinogenic compounds exist in amounts that violate the permitted standards up to 693 times. The court also cited statistics prepared by the National Cancer Institute demonstrating that the cancer incidence rate in Rayong was five times that of other provinces. There is a higher incidence of leukemia among villagers of the Map Ta Phut region (seven out of 100,000 contracting the disease) as opposed to other regions (3 out of 100,000 contracting the disease). The court held that residents living near the estate experienced health risks from the pollution emitted by the estate's petrochemical plants.[36]

The predicament of the villagers in Map Ta Phut is further supported by the results of an environmental governance assessment carried out by Thailand Environment Institute (TEI) and Thailand Environmental Governance Coalition (TAI Thailand), which revealed on the same day as the court's ruling, that the government had persistently encouraged the operations of industrial plants at Map Ta Phut to the detriment of the health of the communities and the environment. The environmental governance assessment was initiated in 2007 to evaluate the Petrochemical Industrial Development Master Plan (Phase III), the Pollution Reduction and Mitigation Action Plan for Rayong Province, and the Map Ta Phut Town Plan. TAI indicator-based methodology was used to examine three pillars of people's access rights,

35 Global Community Monitor. *Thai Villagers Win Pollution Case*. http://www.shellfacts.com/article.php?id=856

36 *Ibid.*

notably, access to information, participation in decision-making, and access to justice. The assessment found that the three plans abovementioned failed in successfully implementing the right of public participation.

Following the court's decision, the Member of Parliaments for Rayong and six other agencies have submitted a statement on 11 March 2009 recommending the government not to appeal against the ruling.

These agencies included:

- Thailand Environment Institute
- Thailand Environmental Governance Coalition
- Thailand Council of Lawyers
- Union for Civil Liberty
- Social Research Institute
- Chulalongkorn University and Society for Industrial Pollution Impacts Study and Campaign.

The statement also recommended that the government revise the position of the Industrial Estate Authority in relation to Map Ta Phut Industrial estate, that the government permits public participation in future pollution control plans, and that the government allows for environmental information to become public information in accordance to Article 9(8) of Thailand's *Official Information Act 1997*.

On the other hand, the government has been urged by the business sector to appeal the court's decision as investments would be jeopardized if the area became a pollution control zone. The business sector claims that a pollution control zone designation would damage Rayong's tourism and food industries. Nevertheless, since 1992, 13 areas have been termed pollution control zones by the NEB. These areas consist of Pattaya, Songkhla's Muang and Hat Yai districts, Phuket, Phi Phi in Krabi and the provinces Samut Prakan, Pathum Thani, Nonthaburi, Nakhon Pathom and Samut Sakhon. So far there has been no evidence indicating that the designation of these areas as pollution control zones has led to negative impacts on their tourism or industries. Fortunately on 16 March 2009, NEB did not appeal the court's ruling and agreed with designating Map Ta Phut municipality as a pollution control zone.

The Map Ta Phut verdict provided the impetus for the Ministry of Industry's 'green factory' project. According to the Minister of Industry Charnchai Chairungrueng, the project aims to "improve the quality of the environment and communities surrounding factories". Investors were urged to invest in high technology industrial waste and fume treatment systems to meet the project's objectives. The ministry has also started to establish health units, and laboratories in local areas to examine air and water quality.

2.6 Analysis of the Thai Cases for Consistency with Ethical Principles of Law

Notably, Thailand has ratified the Rio Declaration, Agenda 21 and the UNFCCC. It is thus bound by its commitment to invoke the precautionary principle and values of sustainable development as prescribed by the declarations. The *Constitution of the Kingdom of Thailand B.E 2550* ("the *Constitution*") (2007) expressly provides for the use of the sustainable development principle under Article 85(5) which stipulates that Thailand shall act in compliance with the land use, natural resources and environment policies by *"conducting the promotion, conservation and protection of the quality of the environment under the sustainable development principle, and controlling and eliminate pollution which may affect health and sanitary, welfare and quality of life of the public…"*

Within this context, the Thai government possesses the right to decide on energy technologies for its people under the principle of state sovereignty; however, under the precautionary principle, if the government's decisions were to cause irreversible damage, the government should ensure that effective measures be implemented in order to prevent environmental degradation or threats to human life even if the full extent of the harm has not been established scientifically.

The laws examined in this study of Thailand do not expressly provide for the use of the precautionary principle; although Article 9 of the *Environment Act* contains an implied reference. According to the Article 9, in case of danger arising from pollution, which will endanger the health of the people, prompt action shall be taken to control, extinguish or mitigate the danger or damage.

In ratifying the international instruments Thailand expressed the desire to comply with the precautionary principle and the principle of sustainable development, and other ethical principles of these instruments.[37] Nevertheless, the case studies above suggest that there is still a need for effective legal implementation.

As mentioned, the Mae Moh and Map Ta Phut residents suffered from severe illnesses such as respiratory diseases and cancers as a result of the emission of toxic chemicals by the Mae Moh plant and Map Ta Phut's plants and factories. The actions of the Thai government in permitting and encouraging the activities of the Mae Moh plant and the Map Ta Phut factories in order to further economic advancement to the detriment of the local residents and the environment demonstrate an inconsistency with the implementation of the precautionary principle and the principle of sustainable development More specifically, Thailand has failed to comply with the objectives of international guidelines for environmental protection, for instance:

- Chapter 6 of Agenda 12, to reduce health risks from environmental pollution and hazards;
- Chapter 9 of Agenda 21, to protect the atmosphere by using energy sources that respect the atmosphere, human health and environment as a whole (9.9);
- Chapter 15 of Agenda 21, to conserve biological diversity; and
- Principle 4 of the Rio Declaration, to achieve sustainable development through environmental protection.

Furthermore, the emissions from the Mae Moh power plant and the Map Ta Phut Industrial Estate inevitably contribute towards the atmospheric concentration of gases producing a greenhouse effect, which affects life, land, lifestyles and natural resources through climate change. Thailand has recognised the significance of climate change and global warming by becoming a member of the United Nations Framework Convention on Climate Change (UNFCCC) in December 1994, and later ratifying the Kyoto Protocol in August 2002. The Kyoto Protocol is a protocol to the UNFCCC, which has the objective of achieving "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate change".[38] The Kyoto Protocol is a legally binding agreement which establishes binding commitments for the reduction of four greenhouse gases being carbon dioxide, methane, nitrous oxide and sulphur hexaflouoride, and two groups of gases being hydrofluorocarbons and perfluorocarbons. However, Thailand as a "Non Annex I" country has a non-binding obligation under the Kyoto Protocol, and thus is not required to curtail emissions under the principle of "common but differentiated responsibilities". Nevertheless, the nation is still expected to abide by the objectives of the UNFCCC and the Kyoto Protocol. Coal is the most carbon-intensive of all fossil fuels, and is a leading cause of global warming. Coal combustion, regardless of the country it occurs in, contributes towards the risks associated climate change and threatens sustainability.

2.7 Representation and Rights in the Provisions of the Thai Constitution and the Environment Act

The ratification of declarations invoking the rights of the public participation, knowledge and justice or remedy by many countries in the world portrays a rising international consensus on a core set of environmental governance norms. These global norms must be transformed into laws and policies on a domestic level in order to ensure worldwide compliance. The duty to implement global norms of good governance at a domestic level lies with national governments.

37 Refer to ECCAP WG1 report for detailed description of the ethical principles included in each instrument.

38 Article 2 of the UNFCCC

In the case of Thailand, both the *Constitution* (2007) and the *Environment Act* provide for the right of public participation, the right to receive information, and the right to remedy.

Under the *Constitution* (2007), the right to receive information from the State and the right of public participation is found in:

- Article 57, which provides that *"a person shall have the right to receive information, explanation and justification from a government agency, State agency, State enterprise or local government organisation before permission is given for the operation of an project or activity which may affect the quality of the environment, health and sanitary conditions, the quality of life or any other material interest concerning or a local community and shall have the right to express his opinions on such matters to the concerned agencies for their consideration".*
- Article 58, which stipulates that *"a person shall have the right to participate in the decision-making process of State official in the performance of administrative functions which affect or may affect his rights and liberties, as provided by law".*

In relation to the environment, the relevant provisions contained in the *Constitution* (2007) under Part 12 'Community Rights' are:

- Article 66, which provides for the right of participation of local communities in the *"management, maintenance and exploitation of natural resources, the environment and biological diversity in a balanced and sustainable fashion".*
- Article 67, which provides for *"the right of a person to participate with State and communities in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and conservation of the quality of the environment for usual and consistent survival in the environment which is not hazardous to his health and sanitary condition, welfare or quality of life".*[39]
- Article 87 of the *Constitution* (2007) further contains a public participation policy, which encourages public participation in the determination of public policy with regards to economic and social development plans, politics, provision of public services, and the examination of the exercise of State power.

Likewise, the *Environment Act* provides for public participation. Article 6 of the Act grants that:

- "For the purpose of public participation in the enhancement and conservation of national environment quality, the following rights and duties may be accorded to individual person as provided by this Act of governing law related thereto:
  - To be informed and obtain information and data from the government service in matters concerning the enhancement and conservation of environmental quality, except the information or data that are officially classified as secret intelligence pertaining to national security, or secrets pertaining to the right to privacy, property rights, or the rights in trade or business of any person which are duly protected by law.
  - To be remedied or compensated by the State in case damage or injury is sustained as a consequence of dangers arisen from contamination by pollutants or spread of pollution; and such incident is caused by any activity or project initiated, supported or undertaken by government agency or state enterprise.
  - To petition or lodge complaint against the offender in case of being a witness to any act committed in violation or infringement of the laws relating to pollution control or conservation of natural resources."

39 The rest of Article 67 of the Constitution (2007) states: "*Any project or activity which may seriously affect the quality of the environment, natural resources and biological diversity shall not be permitted, unless its impacts on the quality of the environment and on health of the people in the communities have been studied and evaluated and consultation with the public and interested parties have been organised, and opinions of an independent organisation, consisting of representatives from private environmental and health organisations and from higher education institutions providing studies in the field of environment, natural resources or health, have been obtained prior to the operation of such project or activity.*

The right of a community to sue a government agency, State agency, State enterprise, local government organisation or other State authority which is a juristic person to perform the duties under this section shall be protected." The section expresses the requirement for a public consultation, an Environmental Impact Assessment (EIA), an establishment of an independent agency, as well as a Health Impact Assessment (HIA).

The *Official Information Act* of 1997 also allows public access to all types of information held by the government, including environmental information.

In view of these legal provisions requiring for public participation in Thailand, there seems to be ample justification for the perception that the government of Thailand has been consistent with the international guidelines for encouraging public participation, such as that stipulated by Principle 10 of the Rio Declaration. However, it is imperative to avoid the danger of assuming that legal provisions are incessantly enforced in reality.

2.8 Weaknesses of the Laws in Thailand

The detrimental consequences of the Mae Moh and Map Ta Phut power plants occurred partly as a result of non-participation of the local residents. The villagers of Mae Moh claimed that the government had neglected to notify the stakeholders of the hazards caused by the power plant, and that the government had persisted in granting permits to expand the Mae Moh power plant despite the occurrence of negative impacts to the people and the environment.

Similarly in the case of Map Ta Phut's power plants, results of an environmental governance assessment carried out by Thailand Environment Institute (TEI) and Thailand Environmental Governance Coalition (TAI Thailand) disclosed that the government had failed to effectively implement the right of public participation within its environmental plans, and had also continuously encouraged the operations of industrial plants at Map Ta Phut to the detriment of the health of local communities and the environment.

In dealing with the Map Ta Phut Industrial Estate case, the Rayong provincial administrative court ruled that the National Environmental Board (NEB) had breached several Articles of the *Constitution* and the *Environment Act* .The court held that the NEB had contravened Article 67 of the *Constitution* (2007) which generally provides for the right of a person to participate with State and communities in the preservation and protection of biological diversity and the quality of the environment. The NEB had denied the right of the local residents within the Map Ta Phut community to participate in the preservation and conservation of the quality of the environment at the Map Ta Phut municipality, and to subsequently protect the environment from the adverse consequences of the power plant operations. The community's right to a *"usual and consistent survival in the environment which is not hazardous to his health and sanitary condition, welfare or quality of life"* failed to be upheld by the government in this regard. Accordingly, the provisions for the right to public participation in Principle 10 of the Rio Declaration and Chapter 8.4(f) have also not been espoused by the Thai government.

The rulings given by the provincial courts regarding the Mae Moh coal-fired power plant and the Map Ta Phut Industrial Estate seem to provide the notion that Thailand is steering towards the proper direction consistent with ethical principles in invoking the "polluter-pays" principle. As mentioned above, EGAT was ordered by the court to compensate affected villagers who suffered from severe health problems due to the toxic emissions and to arrange for their relocation,[40] and NEB was ordered by the court to clean up polluted industries within the Map Ta Phut Industrial Estate and to declare the area a 'pollution control area'. Nevertheless, the NEB publicly declared on 11 May 2009 that the Map Ta Phut projects were able to proceed even though the NEB had published the declaration of Map Ta Phut as a "pollution control area" in the Royal Gazette on 30 April 2009 in accordance with court rulings. Despite the prior court rulings stipulating that the government shall work towards environmental conservation, the NEB has now permitted all investment plans in the area, including those in the process of seeking

40 Relocation or resettlement can sometimes amount to a form of economic or social disruption as it intensifies existing gender disparities and inequalities. Often, compensation and resettlement of affected individuals are based on legal ownership of land and property. Women in many societies do not have legal land rights (this is not the case in Thailand) or land is mainly registered in male names. They receive lower levels of education as opposed to men, and work mainly in the informal sector. Thus, economic or social disruption may ensue in greater hardships for women than for men. Refer to Asian Development Bank, 'Gender Checklist: Resettlement' (February 2003) for more information on how social impact of dislocation tends to affect women more than men.

environmental impact assessments, to continue with development as per normal in order to avert the disturbance of investments.[41]

Pollution in the Map Ta Phut area continues to be a serious problem, stemming from a lack of enforcement of regulations. Meanwhile, local residents have continuously petitioned their ordeal to the government. On top of this, in June 2009, 76 industrial projects were granted governmental approval to allow for their developments in the Map Ta Phut area. However, the legal validity of the approvals, as well as the environmental and health impact assessments, were questioned as they were alleged to be granted without the exercise of proper public participation processes required by the Constitution. This resulted in a coalition of environmental and community activists seeking a court injunction against ministers and state agencies, in order to suspend the proposed industrial projects and their approved environmental impact assessments.

In September 2009, the Rayong Administrative Court ruled against the government by issuing an injunction to suspend the operating permits of the abovementioned 76 industrial projects until a further hearing was conducted as to whether the governmental approvals were in breach of Article 67 of the Constitution.[42] Article 67, a section which has given rise to controversy regarding its applicability, specifies that any project seen as harmful to the environment and people's health must undergo an environmental impact assessment and public hearing before its endorsement, and requires the government to arrange for an independent environmental agency to give advice on implementation of projects that could be harmful to people's health and the environment. The suspension imposed by the injunction has been said to have led to negative impacts on 25 PTT (a major natural gas and oil state company) projects, resulting in a prediction that the earnings of PTT Group and its subsidiaries may decrease by 10 per cent in 2010 due to construction delays.[43] Finance Minister Korn Chatikavanji has expressed concerns that the postponement of substantial investments in Map Ta Phut could decrease economic growth by 0.4 per cent in 2010. The case is currently subject to appeal by the government.

The Thai government is currently reflecting on the adverse consequences of its decisions in relation to energy issues, including that of the Mae Moh coal-fired power plant and the Map Ta Phut Industrial Estate, and concentrate on effectual enforcement of domestic environmental laws, concentrates and also focuses on demonstrating an unswerving compliance with international guidelines.

Upon closer examination of the legal policy implemented by the Thai government, one will grow to realise the lack of effectiveness of the legal provision of public participation. For instance, in the *Environment Act*, the right to public participation, and the right to be informed and obtain information are only provided under Article 6 of the Act, without any latitude for its development in other Articles of the Act. One limitation can be found in the wordings of Article 6(1), which stipulates that individuals have a right *"to be informed and to obtain information from the government concerning the environment, except information that is classified as secret intelligence pertaining to national security, or secrets pertaining to the right to privacy, property rights, or the rights in trade or business of any person which are duly protected by law".* The Act does not go on to provide explanations of conditions that may or may not fall under the realms of "secret intelligence" or "secrets pertaining to the right to privacy".

It seems that the Thai government is given broad discretion under the Act to categorise information under the umbrella of "secret information", hence, it is able to use the wording in Article 6(1) to facilitate the evasion of its legal obligation of informing the public of matters concerning the environment. In addition, the right to complain and petition under Article 6(3) is contingent on the discretion of governmental officials to act upon the complaint.

41 Bangkok Post. *Map Tha Phut Projects Can Proceed Despite Declaration.* http://www.bangkokpost.com/business/economics/16494/map-tha-phut-projects-can-proceed-despite-declaration

42 Bangkok Post. *Court Rules to Halt Industrial Projects.* http://www.bangkokpost.com/business/economics/16494/map-tha-phut-projects-can-proceed-despite-declaration

43 Nareerat Wiriyapong. *Ruling May Cost PTT 10% of Earnings.* Bangkok Post. http://www.bangkokpost.com/business/economics/25129/ruling-may-cost-ptt-10-of-earnings

This has demonstrated that the rights of the public to participation, information and complaint are effectively restricted, since the government's disclosure of information to the public can be made dependent upon its strategic interests. The general public can only receive such information or remedies if governmental officials have the intention to offer them.[44]

2.9 Opportunities for Community Involvement

Within the context of Thai administrative procedures, provisions for public participation are affirmed on the constitutional level; however, they fail to be effectively implemented by the lower levels of regulatory instruments. There are no fixed rules or specific laws as to how the public can participate and be heard before the government proceeds with its projects, and there is an absence of an effectual expedient to ensure public participation. Nevertheless, this does not mean that there are no opportunities for community involvement in relation to the use of energy technologies. In fact, the opportunity for community involvement does exist, but perhaps in an inconsistent and limited manner.

The Ban Hin Hgome village located in Udomthani Province, Northeast Thailand, has been generating electricity through a community-scale solar water pumping system since February of 2000, whereby the villagers have used solar water pumps to pump water from deep wells for domestic consumption. Prior to the use of the solar water pumping system, water pumps were powered by electricity. The project succeeded in reducing carbon dioxide emissions as well as reducing the costs of electricity for the villagers. It has also provided a steady supply of water to the villagers, leading to some community members pursuing income-generating activities such as the cultivating of medicinal plants for sale. The project was initiated by the Tambol Administrative Organisation (TAO), a legitimate community-governing unit, whose members are elected by villagers of the local community. Villagers were trained by Naruesuan University in relation to the use and maintenance of the solar water pumps. Notably, governmental agencies provided funds for the construction of wells that were needed in order to operate the solar pumps. The community received financial assistance from the Office of Accelerated Rural Development in the Ministry of Interior, and also from the Department of Mineral Resources in the Ministry of Industry. Furthermore, due to the success of the project, the Sangkhorm District Office in the Udomthani Province has selected TAO to be the central organisation for energy conservation and the environment (among four other organisations under its control). This presented TAO with the opportunity to spread its knowledge in relation to renewable energy projects and energy conservation efforts.

Another renewable energy project that allows for community involvement with regards decision-making is one concerning the use of hydraulic power to operate rice mills (mechanical energy from falling water is used to power the mills). This project is operated by the communities of three villages located in the secluded area of mountainous Doi Inthanon National Park. Chomthong District of the Chiang Mai Province. These three villages are mainly made up of approximately 200 households of an ethnic minority group in Thailand, referred to as the "Karen" minority group. The project was implemented to assist the villagers in their income-generating activity of growing rice, and began operations in February of 2002. The project did not receive financial assistance from governmental agencies, but received funding from SGP Thailand National Coordinator and Thailand Research Fund. Community members have been trained to operate the mill, and several community members have established an organisation to manage the mill. Before the use of hydraulic power, the villagers burnt diesel fuel to generate power for the operation of the rice mills. The use of hydraulic energy has reduced the emission of greenhouse gases produced by diesel-burning engines. The incomes of the villagers have also increased by the project, which has made rice milling more convenient. Prior to the implementation of the project, the villagers were required to travel 27 km to operate milling services, which entailed considerable time and expense.

The above renewable energy projects demonstrate the existence of community involvement and representation in relation to the choice of energy technologies in Thailand. Community members

44 Shytov, Alexander. *Public Participation in Environmental Protection and Thai Folk Wisdom.*

are given opportunities to participate in the management and operation of energy projects at a local level. In this sense, community members are better represented and have a voice regarding energy infrastructure in their region. This situation diverges from the common occurrence of an energy sector dominated by governmental agencies and state enterprises that possess chief authority in deciding on energy technologies for the people.[45]

The funding of the solar water pumping system in Ban Hin Hgome village by governmental agencies also depicts the government's support and approval for local-scale renewable energy projects that are controlled and operated by the local communities, with little impingement of vertical authority. These renewable energy projects differ from the cases of Mae Moh and Map Ta Phut in the sense that these renewable energy projects were initiated by the residents of local communities, who were accordingly presented with opportunities for meaningful participation in decision-making, whereas the villagers of Mae Moh and Map Ta Phut were not afforded the same opportunity. These renewable energy projects are examples of actions being taken towards the goal of a clean environment and sustainable development in Thailand as renewable energy technologies offer a better quality of service or a decrease in energy related costs.

2.10 TAI Research

In a test carried out by The Access Initiative (TAI) in 2002, it was found that the act of gaining access to policy documents of the Thai government required fairly sophisticated knowledge of the agency in question, or personal acquaintance with decision-makers or staff. TAI national teams conducted a test whereby it requested identical information from governmental agencies through personal contacts, as well as through formal letters sent by organisations unknown to the governmental agencies. TAI obtained the requested information promptly in former case, whereas there were delayed replies or no replies in the latter case. Furthermore, the TAI experienced difficulty in obtaining management plans for the Hin Krud power plant in Thailand, and also found that the Thai public authorities generally scored weak in relation to accessibility in communicating to affected communities or public interest organisations that plans were under way to grant operating licenses, award a concession or approve a development project. The government published their intentions in official government gazettes, but not in journals or other forms of reading material that were frequently read by potentially affected communities. The chances for the public to be aware of the scope or extent of particular projects or activities were mostly deficient.[46] The TAI revealed that the methods of disclosing environmental information by Thai governmental agencies are often unsystematic and disorganised. The state officials undergo insufficient guidance as to the information they have to produce, how often information was to be disseminated, and to whom they were to be distributed. In Thailand, wide discretion is afforded to government officials as to the types of information that should be made available to the public, thus restricting the public's ability to seek justice for the government's unwillingness to disclose particular information. Also, there is a lack of legal definition in Thailand as to what constitutes 'public interest', which is vital for determining whether the legal structure supports access to justice. The lack of definition renders it difficult for communities or groups representing the public interest to be eligible for standing.

With regards to the public's seeking of justice, TAI found that citizens were able to seek access to justice through courts of law and by administrative means; however, these paths of seeking justice were not fully developed or easily accessible to the public. There is also no provision for administrative or judicial review for national policies or rules once they come into force, meaning there were no processes available for affected parties to raise concerns in relation to particular policies or laws once they were implemented. The TAI ranked the affordability of fees for processing administrative claims and litigation

45 Similar community-based renewable energy projects exist in other countries in the Asia-Pacific region. In Uttaranchal, India, a micro-hydropower project carried out by the Uttaranchal Renewable Energy Development Agency (UREDA) developed inexpensive, improved watermills for community use. Users in the community would share the costs and the project was shaped to attract grants to help establish self-sustaining, community-owned activities. Refer to Asian Development Bank's '*Nature + Nurture: Poverty and Environment in Asia and the Pacific*' (2009).

46 Above. n31, 85.

in Thailand as intermediate-meaning the costs for administrative and litigation fees could not be waived, were not prohibitively high, but constituted a significant amount for the general public. Nevertheless, there exists in Thailand an association of affordable, independent legal representation available to the public in various parts of the country. Training of staff from governmental agencies was found to be inconsistent. Some staff received training in matters of public participation, whereas others were trained in information access matters. It was rare for staff to possess complete knowledge of all areas, and few civil servants were aware of the repercussions for existing laws and policies or ways of applying the laws.[47]

2.11 NGO Representation regarding the Environment and Energy in Thailand

Non-governmental organisations (NGOs) play a significant role in monitoring the government's performance. They act as a linkage between society and the government, and contribute towards public participation through various means such as informing and organising the public for meaningful participation, representing public interest in court, and working with the government in drafting policies and legislations to support access to information and justice.

For instance, the Thailand Environment Institute (TEI), a TAI partner, worked on the Asia-Europe Meeting Guide for public participation. In Thailand, governmental inadequacy and partiality in policy-making gave rise to the emergence of NGOs as significant actors in the Thai civil society. NGOs initially existed to give voice to vulnerable communities and powerless peasants. Environmental NGOs in Thailand have been established since the late 1980s, but most of them remain scattered and small in numbers.[48] Some NGOs are involved in policy matters (e.g. Foundation for Ecological Recovery); some carry out intensive research (e.g. Thailand Environment Institute); others form expertise groups (e.g. Wildlife Fund Thailand); or work to promote environmental awareness (e.g. Thailand Environment and Community Development Association). Within the context of the Mae Moh coal-fired power plant and Map Ta Phut factories and plants, several environmental and social NGOs had gathered to protest against coal power plants by forming the People Against Coal coalition, which consisted of a number of NGOs.[49] There are other environmental NGOs in Thailand as well.[50] NGOs active in the field of energy conservation and promotion of renewable energy technologies are namely, Energy Conservation Center of Thailand (ECCT), Energy for Environment Foundation (E for E), Appropriate Technology Association (ATA) and Palang Thai. These NGOs sometimes work as government's consultants in relation to issues of energy conservation and the promotion of renewable energy technologies. Nevertheless, the influence of NGOs in the decision-making process is deemed to be relatively limited.

The factors impacting on the functions of NGOs consist of firstly, the diversity of funding sources of NGOs, and secondly, the conditions for the legal registration of NGOs. The availability of sufficient funding sources determines the extent to which NGOs are able to perform their activities and services in representing public interests. In Thailand, NGOs have access to a diversity of domestic and international sources of financing without restrictive conditions. The Thai law grants juristic status to NGOs under Article 7 of the *Environment Act*. However, only NGOs who have registered are given legal standing, and are able to request for governmental assistance and support for NGO activities.

47 Above. n31, 112.

48 Simmons, Jane, J. *Human security and Thai NGO & Governmental Roles*, p. 79

49 Including: Wieng Haeng Conservation Group, Chiang Mai Sustainable Energy Group, Krabi Friends of the People Bonok Conservation Group, Alternative Energy Network Campaign for Alternative Industry Network, Bankrut Conservation Group, Map Ta Phut Conservation Group, Northern Thailand NGO Coordination Committee, Surin Sustainable Energy Network, Network of Occupational Health Sufferers of Thailand, Northern Alternative Network, Greenworld Foundation, Sueb Foundation, Thai GIS for Civil Society Development, Policy and Research Development Group, Northern Farmers Assembly, Greenpeace, among others.

50 Chao Phraya Delta, Nature and Life, Makmai Saitam Group, Ozone for Life Foundation, Paachumchon, Prachuab Coal, Protection Mun River Network, Southeast Asia Rivers Network, Thai Environmental and Community Development Association, Yom River Network, Sawasdee Foundation.

This requirement for registration before financial assistance is available to NGOs acts as a deterrence to many NGOs as registration involves high costs and increased supervision by state authorities. In general, NGOs in Thailand have limited financial and technical resources, and a lack of recognition by the public, which often undermine the credibility of their activities. Again, the government is conferred a wide discretion as to whether or not to permit registration of particular NGOs. Article 8(5) of the *Environment Act* states that the Minister shall have the power to revoke the registration of an NGO if its activities are deemed to cause disturbance, is contrary to public order, or is unsuitable. The Act fails to provide legal clarifications as to the type of activities that constitute a 'disturbance', or that are 'contrary to public order' or 'unsuitable'. Although NGOs have roles in the National Environment Board (NEB) whereby four NGO representative members act as NEB members, out of a total of 23 NEB members, NGOs are not at liberty to nominate their representatives.

2.12 Contributing Factors to Weakness of Rights

The underlying rationale for the weakness of public participation and access to information provisions can be partly attributed to the Thai government's policies that accord prevalence to economical development. Environmental protection is often afforded prominence only to the extent that it does not interfere with the country's overall economic expansion. In many nations of the world, there is resistance to the encouragement of public participation simply because the process of public participation acts as an impediment to "smooth" administrative and judicial procedures.

The weakness of Thai regulations in general can be accorded to the difficulty of maintaining channels of communication between provincial government agencies, especially in the more isolated locations. The implementation of legal provisions is hindered by the actuality of political administration in Thailand. Thai governments are often established by coalition, and the various ministries may be lead by politicians from different political parties with incongruent interests. Thus, complexity is often involved in uniting common policies within the administrative realm.

The Thai government undergoes recurrent changes in representation due to political instability, ensuing in the difficulty in maintaining solidity of administrative policies, including environmental policies and regulations.[51]

A trait of the Thai administration and political activities is that the energy sector is not a focus of much attention from the civil society, considering the vital implications of energy to the state's economy, environment and society. Very few individuals are involved with the submission of ideas for public discussion, and there are even a smaller number of critical discussions concerning available alternatives and tactics. This leaves a niche for "well-connected" individuals to play a decisive but unjustified role in determining the path of the energy sector, leading to the detriment of local communities. The result is that imperative decisions are often influenced by "politics and personality" rather than by "analysis".

Statistics demonstrate that in 2006, EGAT managed 47 per cent of electricity generation market share. It also owned and ran the state's electricity transmission network, and was the sole purchaser of electricity in the state. This raises a conflict of interest as EGAT is presented with an economic enticement to prevent other independent power producers' access to the transmission network. The policies of EGAT, one being the Power Development Plan (PDP) which focuses on the development of EGAT's centralised fossil fuel plants and hydropower imports from Myanmar, Yunnan (China) and Lao PDR, are renowned for their non-participatory processes, lack of transparency, and the failure to consider social and environmental costs. According to EGAT's PDP, Thailand's energy demands in the next 15 years will be chiefly met by centralised fossil-fuel powered plants. Residential and small business consumers amount to 98 per cent of electricity consumers in Thailand; however, they are not afforded with representation in the planning process.

51 Tan, Alan, K.J. *Preliminary Assessment of Thailand's Environmental Law*. http://law.nus.edu.sg/apcel/dbase/thailand/reportt.html

Strong local opposition against EGAT's power plants, such as the opposition against the Mae Moh coal-fired power plant, has obliged EGAT to consider operating these plants in neighbouring countries such as Myanmar, Lao PDR and Cambodia where community rights are imperceptibly upheld.[52] It is likely that Thailand's operation of its plants in these neighbouring countries will result in a "one-way flow" of electricity into Thailand, with the consumers' money flowing into EGAT and its related investors whilst circumventing the villagers affected by the adverse effects of the power plants.[53]

Thailand's energy sector is marked by a monopoly system consisting of state enterprises such as EGAT and PTT. Also, Thailand has yet to set up a proficient, fair and independent regulatory authority whose objective is to ascertain that decisions in relation to energy issues are made in the public interest, and also have adequate legal power to enforce observance. Studies undertaken by the Thai government, its agencies and the World Bank have demonstrated that Thailand has the potential for clean, cost-effective, and decentralised energy alternatives, and stands in a good position to attain a sustainable energy system.

Civil society organisations and community groups have been active in demanding for a restructuring of Thailand's energy planning sector for it to embrace an integrated resource planning (IRP) process, similar to the one applied in the USA and Europe. The IRP entails that clean decentralised energy is used as extensively as conventional centralised energy plants, and allows for energy infrastructure investments to be implemented based on the condition that they generate dependable energy services at the lowest social and environmental cost to society, as opposed to the lowest commercial cost to energy investors. The IRP also requires for important decisions to be formed through processes that allow for informed and meaningful public participation, as well as an independent energy regulator to administer the process.[54]

The adverse effects of the Thai government's decisions as exemplified by the Mae Moh and Map Ta Phut case studies have demonstrated inconsistency with the Thai government's obligation to strive for sustainable development in accordance with Thailand's ratification of international declarations such as the Rio Declaration and the UNFCCC. Thailand's energy sector suffers from contrasting policies in the sense that the government has a preference for deriving energy from fossil fuel plants on one hand, whilst attempting to promote policies based on clean, decentralised energy on the other hand.

2.13 Conclusion

The rights of nation states to decide on energy technologies for their people can be attributed to the principle of state sovereignty, which stipulates that a nation state has absolute jurisdiction within its territory to regulate its internal affairs without intervention from other states. These rights lie chiefly with governments and their related agencies, who act as representatives of nation states. These rights are restricted when such decisions pose an environmental or security risk either to the local region or to countries in other regions. This is especially true for countries that have committed to international declarations advocating the application of ethical principles such as the precautionary approach and sustainable development in relation to energy use.

International law instructs that nation states have rights to decide on energy technologies for their people, unless the decisions result in harm to the people or damage to the environment of other states. This principle is expressed in various influential texts, namely the Rio Declaration, the Charter of the United Nations, Stockholm Declaration and the United Nations World Charter for Nature.

On a domestic scale, governments possess the sovereign right to manage their own environment and natural resources, and at the same time have an obligation to ensure the safety and health of its citizens and to conserve its own environment. The government of nation states have a responsibility to ensure that the processes of decision-making are implemented within the context of good governance, which

52 Refer to Chapter 6.7 in this report (Investment by Thailand in the Lancang Cascade).

53 Greacen, Chuenchom Sangarasri and Greacen, Chris. *Thailand's Electricity Reforms: Privatization of Benefits and Socialization of Costs and Risks*, p. 540.

54 Above. note 22, p. 5.

requires for governments and their agencies to observe principles of transparency, participation, equity, inclusiveness and the rule of law.

The dominant view of many governmental choices of energy technologies currently appear to rest heavily on the maximising of profits, and thus cannot be distinguished from the view of industry to maximise profits. This is not surprising when state-run enterprises dominate the markets.

Harm to the human population and other living beings, as well as environmental degradation, are the inevitable outcomes of the government's derivation of energy supply from the burning of fossil fuels, as opposed to the derivation of clean energy from renewable resources.

In order to strengthen the rights of the people and affected communities, there is a need for liberal judiciary, strong environmental legislation and explicit constitutional provisions, as well as the enforcement of public rights in relation to information, participation and justice. There is a lack of a strong institutional support mechanism to ensure the enforcement of these rights. If the people of a nation state are not presented with a true opportunity to take part in the decision-making process, they will not be able to influence the outcome of governmental decisions with regards energy technologies to a meaningful extent.

A challenge exists as to transforming legal provisions and international guidelines into concrete meaningful actions. Within this context, the necessity of strengthening enforcement and compliance mechanisms has been recognised, and was identified by the Earth Summit in 1992, in which Chapter 8.21 of Agenda 21 established an international directive to build compliance and enforcement capacity as an essential element of environmental management.

3. Representation and Decision-Making in Tuvalu's Energy Sector

3.1 Tuvalu and its Energy Sector[55]

Tuvalu is a small developing state in the Pacific. Its population of 12,000, dispersed across nine remote islands, has an increasing demand for energy. Oil dominates energy consumption, being used for most electricity generation and powered transport. Consumers face high energy prices, and at times irregular supply. The power to make decisions about energy technology in Tuvalu is distributed among a number of actors. While the national government has primary authority, development and implementation of energy policy often involves government partnerships with aid agencies, the state controlled energy corporation, regional organisations and international non-governmental organisations.

Oil dependence has been identified by the Tuvaluan government as a major challenge. The Tuvalu Electricity Corporation, a division of the Ministry of Works and Communication, is responsible for supplying power to the population and has the exclusive right to sell electricity. While national policy is to increase use of renewables to 20% of national energy supply by 2015, the government is also working to improve the energy efficiency and management of the diesel-powered electricity generation and distribution system. NGOs currently play a significant role in bioenergy (discussed below).

Increasing demand for electricity on Funafuti, home to about half the population and the nation's capital, contributed to the government's decision to approve a Japanese aid-funded installation of new diesel-powered generators on that island in 2006. Tuvalu has been the recipient of several ad-hoc donor and NGO renewable energy projects, with solar and biomass technologies being installed in different locations around the nine islands. Their success has been mixed.

3.2 Community Consultation and Energy Planning in Tuvalu

Formal community consultation is rarely practiced in energy planning and in other areas at the national level, or among donors. Typically, assessment of renewable energy technology failure points to issues of expertise, management, policy, geography, and technology, and community consultation issues are frequently neglected in project evaluation. Opportunities for community involvement in decisions affecting individual islands and their community, do exist however and are facilitated by legislation.

The *Falekaupule Act* (1997) devolved some decision-making to island communities using a modified, democratic version of the traditional assembly of island chiefs, called the *falekaupule*. Island chiefs are important decision-makers in island communities. All adult island community members are entitled under the legislation to participate in this form of island governance. However, in practice the voices of women and young people are often excluded and a need for increased participation in governance by these groups has been identified in Tuvalu's National Strategy for Sustainable Development (*Te Kakeega II)*. Thus, opportunities for participation in energy planning tend to be limited by age and gender, are formal rather than functional, and are more accessible at the level of the sub-national island than the nation. For example, there was no community consultation carried out prior to the installation of the new diesel-powered generators in the capital's electricity power station. While the national government informed the community about the project via radio announcements, there was no legislative requirement or government initiative to conduct community consultation.

55 This Chapter is written by Dr. Carol Farbotko.

3.3 Non-Governmental Organisations in the Energy Sector in Tuvalu

Renewable energy projects initiated and implemented by overseas NGOs have received government support in Tuvalu. Between 2006 and 2008, a pilot grid-connected solar energy system was constructed on Funafuti. The NGO involved was e8, a non-profit initiative of ten large electricity companies from the G8. The solar system is operated and maintained by the Tuvalu Electricity Corporation with a two-year monitoring period provided by e8, aimed at ensuring the system's sustainability. The outcome of this project is that three per cent of electricity consumption on Funafuti is solar powered. Planning for the project involved community consultation as part of the environmental impact assessment. Because of the risk of disturbing noise and light reflection coming from solar panels, the consent of communities living near the construction site was obtained before the project went ahead (e8 no date).

Another renewable energy project in Tuvalu has been initiated by Alofa Tuvalu, an NGO founded by French environmentalists specifically for the purpose of promoting and improving bioenergy in Tuvalu. Bioenergy already accounts for 18% of energy consumption in Tuvalu, compared with oil consumption which stands at 82%. Alofa Tuvalu works closely with bioenergy experts, who have identified biomass as a sustainable renewable energy source for Tuvalu. An Alofa Tuvalu commissioned study recommended that coconuts, pig manure and organic waste can all be converted to biofuel using small-scale technologies in an environmentally and economically sound manner in Tuvalu, and highlighted that bioenergy is not included in official national energy statistics (Hemstock and Radanne 2006).

Community consultation, particularly with women's groups, characterises Alofa Tuvalu's approach to bioenergy planning. The organisation takes the view that since women are the main users of bioenergy, any implementation of changes in bioenergy use and technology need to involve them directly to ensure sustainability (Hemstock and Radanne 2006). Alofa Tuvalu also works closely with the government and its director has been appointed Tuvalu's honorary consul in France. As a result, bioenergy users and bioenergy technologies are receiving greater attention by government than in the past.

3.4 The Role of Community Consultation in Showcase Energy Projects

Alofa Tuvalu and e8, both organisations of the industrialised world, have used their renewable energy projects in Tuvalu to send a symbolic message about renewable energy use to the global population. Their projects have the double objective of benefiting Tuvaluan communities and creating a showcase of renewable energies to which the rest of the world can turn to for guidance. Indeed, Alofa Tuvalu's ultimate goal is to build and offer the world a demonstration model in Tuvalu for mitigating climate change by phasing in renewable energies and phasing out fossil fuels there altogether. Tuvalu's symbolic power in this context has arisen from international public interest in its vulnerability to rising sea levels. Tuvalu's national territory is comprised entirely of low-lying islands, and the newsworthiness of 'disappearing islands' has seen Tuvalu occupy a prominent position in media coverage of climate change in the industrialised world (Farbotko forthcoming). The use of Tuvalu as a showcase of renewable energy is based on an assumption that a culture of over-consumption can be more easily reversed there than elsewhere. It supposes that Tuvaluans are more 'traditional' and live closer to 'nature' than those in the industrialised world. Tuvaluans are imagined as model environmental citizens, with links being made between vulnerability to climate change in Tuvalu, its small per capita and absolute greenhouse gas emissions, and Western myths of Pacific paradise.

The labelling of Tuvalu as a showcase of renewable energy by foreign NGOs raises a number of practical and ethical questions concerning whether and how the symbolic value of renewables is incorporated into energy planning. Is it appropriate for renewable energy organizations from the industrialised, high carbon emission world to enrol low-emission populations in their campaigns against fossil fuels? Should the inhabitants, or even the government, of a small developing state, with neither political clout or extensive human and natural resources, be asked to shoulder the politico-symbolic burden of global renewable energy showcase? Do foreign NGOs and energy companies have a responsibility to conduct community consultations on how they are representing that community to the rest of the world? These are issues which may usefully inform energy technology initiatives among national governments, aid agencies, energy corporations, regional organisations, international non-governmental organisations and communities.

4. Indigenous People and Palm Oil Plantations in Sarawak

4.1 Introduction

This case study focuses on the palm oil sector in the state of Sarawak, and examines the spaces and processes given to indigenous tribes, mainly the Penan and Iban tribes, in the decision-making processes related to use of the environment, with particular reference to palm oil plantation development for energy production.[56] The definition of the terms "indigenous people" themselves poses some difficulty. International law offers no clear definition; however, Marcus Colchester suggested the following definition: "*long-resident peoples, with strong customary ties to their lands, that are dominated by other elements of the national society*".[57] Also, some attention has been given to the principle of self-identification. This principle is defined in the 2007 United Nations Declaration on the Rights of Indigenous Peoples by Article 33, as follows: "*Indigenous peoples have the right to determine their own identity or membership in accordance with their customs and traditions*". In Malaysia, the Federal Constitution refers to the indigenous people of Sarawak as the "natives", or the "Anak Negeri".[58] Commonly, they are called the "Dayaks" or the "Orang Ulu".

The Iban are the largest portion of the population in Sarawak, whereas the Penan are originally a nomadic people. Today, only 200 persons are still clearly living nomadic lives. Both Iban and Penan communities have experienced problems with the expansion of palm oil plantations in Sarawak. The palm oil sector is already very important economically and still more promise is expected, with the emergence of programs promoting the use of palm oil as a biofuel in a growing number of countries. In April 2006, the Survival International campaigner Miriam Ross went to Sarawak to investigate on the situation of the indigenous people, and more specifically the Penan. One of her comments was as follows: "*where the forests have already been logged to death, they are being replaced with oil palm plantations for biofuels and other uses. Oil palm is even worse for the Penan than the logging, because the plantations leave no space for them to hunt or gather*".[59] Based on examples from different Penan and Iban tribes in the state of Sarawak (Malaysia), this case study aims to put forward the issues raised by the development of the palm oil sector in Sarawak.

Because the use of palm oil as a biofuel is seen as an advantage for the environment, the global demand for palm oil has risen in recent years: this sector has thus become an important economic asset for Malaysia, and has given way to many development projects in the Borneo rainforest to increase the area under cultivation. There have been numerous consequences for the indigenous people of Sarawak, such as the Iban and Penan tribes (discussed in section 4.2). The rights of indigenous tribes are protected by Native Customary Rights (NCR); however, previous case studies revealed a lack of consideration for and representation of the indigenous tribes in the decision-making processes, and though the latter have attempted to resort to legal means, one may raise some questions regarding their relative success (see section 4.3). It becomes therefore necessary to examine the effectiveness and the limits of alternative means used to protect indigenous rights in decision-making, through local actions and international support (see section 4.4).

56 This Chapter is written by Ms. Claire Parfondry.

57 Colchester, Marcus. Thematic Paper for the World Commission on Dams: Sharing Power: Dams, Indigenous Peoples and Ethnic Minorities. *Forest Peoples Programme*, 2000.

58 International Working Froup for Indigenous Affairs. The Political System and Government Policy. http://www.iwgia.org/sw18359.asp (accessed on 22 September 2009.

59 Survival International. 2009. Survival Campaigner investigates dam and biofuel threats to Borneo tribe. http://www.survival-international.org/news/4425 (accessed on 13 September 2009).

4.2 The Palm Oil Sector in Sarawak

Palm oil may be used for three main different purposes: cosmetics (e.g. soap), cooking, or biofuel. The first two purposes, especially the second one, are widely common. Biofuel, however, has been experiencing an increasing demand only recently, as environmental goals for reduction of carbon emissions have to be reached.

4.2.1 An Economic Asset for Malaysia

The Palm Oil sector in Malaysia in general, and in Sarawak in particular, has become a very important asset for the economy of the country in the last few decades. Indeed, the use of palm oil as a biofuel presents a significant advantage for the environment. This led to the rise of a global demand for palm oil.

4.2.1.1 The Environmental Advantages of Palm Oil as a Biofuel

The use of palm oil as a biofuel presents some significant environmental advantages. Indeed, many environmental NGOs claim that its use would be a way to reduce the emissions of global warming gases, thus contributing to the fight against climate change. According to Friends of the Earth, "*the growth of new biomass takes carbon dioxide out of the air to compensate for the carbon added when biomass is burnt*".[60]

In order to reach environmental targets, industrial countries wish to replace fossil fuel (non-renewable energy) more and more with biofuel. Palm oil is seen as an ideal energy alternative, as its industrial use emits only around 40 per cent of the CO_2 emissions generated by fossil fuels, and its price is very competitive. Therefore it is considered as one 'answer' by industrialised countries to replace fossil fuels by biofuel from palm oil, in order to reach environmental targets.

However, recently, many specialists have questioned the so-called environmental advantages of palm oil. Indeed, the ecological consequences linked to the expansion of palm oil plantations are of broader and higher impact, in the long term, than simply what is gained through the replacement of fossil fuels.[61]

4.2.1.2 The Rise of Global Demand for Palm Oil as a Biofuel

Since 2001 the production of palm oil has grown not only due to higher demands for its use as a cooking oil in developing countries, mainly from China and India, but also due to the emergence and development of biofuel and biomass programs in India, China and the European Union. As a 2006 United States Department of Agriculture report predicts, "*growth in industrial use comes as Malaysia, China and the EU-25 expand their palm oil biofuels programs*".[62] Indeed, the European Union has requested that "*5.75 per cent of EU countries' transport fuel come from plants by 2010*".[63]

The emergence of palm oil as a biofuel has opened the way to a new market for palm oil producers. In ten years, between 1999 and 2009, the global consumption of palm oil has doubled, reaching 42 million tonnes in a year.[64] In 2008, less than 1 per cent of Malaysia's production of palm oil was destined for biodiesel production, but a sudden increase of this use is to be expected with the rise of global demand for palm oil as a biofuel.

60 Friends of the Earth. 2009. The use of palm oil for biofuel and as biomass for energy, Friend of the Earth's position.

61 Monbiot, George. The most destructive crop on earth is no solution to the energy crisis. *World Rainforest Movement Bulletin No. 102,* January 2006.

62 United States Department of Agricuture. 2006. Oilseeds: World Markets and Trade, Palm Oil Continues to Dominate Global Consumption in June 2006.

63 Monbiot, George. 2006. The most destructive crop on earth is no solution to the energy crisis, *World Rainforest Movement Bulletin No. 102*, January 2006.

64 Lewis, Leo. 2009. Palm oil has become an accurate measure of the global market, *Times Online*, http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article6796890.ece (Accessed 13 September 2009).

Over 90 per cent of the world production of palm oil comes from Malaysia and Indonesia, meaning that the sector is expected to be a promising one for both countries. In 2006, the Malaysian palm oil industry represented US$ 9 billion just from the exports. The domestic market is also very promising, economically, as the Malaysian national biofuel policy wishes to use biofuel in "transport, industry, technologies, exports and for a so-called 'cleaner environment'".[65] According to the 'Land is Life' report, "by blending 5 per cent processed palm oil with all diesels in the country, a new domestic market for 500,000 tonnes of palm oil per year will be created. This is equivalent to 40 per cent-50 per cent of the current national stock of palm oil".[66]

4.2.2 Development Projects in the State of Sarawak and Consequences for Indigenous Tribes

4.2.2.1 Production of Palm Oil and Projects to Increase the Area under Cultivation

The rapid spread of palm oil plantations is due to their high profitability: "*cheap labour, low-cost land, abundant support from the World Bank, the IMF and UNDP, the short period between planting and starting to harvest, and a market on the rise in the countries of the North*".[67]

Among the vegetable oil crops traded in the world, palm oil is the second most traded (after soy). Malaysia is the second largest palm oil producer after Indonesia, and is the world's largest exporter.[68] Malaysia and Indonesia, put together, produce over 90 per cent of the world's palm oil.[69] In 2009, Malaysia produced about 42 per cent of the world's palm oil. 4.3 million hectares of the country's land are dedicated to palm oil plantations. While more than half of the plantation land is on the Peninsular (2.3 million hectares), new projects plan to develop plantations on the island of Borneo, in the Malaysian states of Sabah (currently 1.24 million hectares) and Sarawak (currently 600,000 hectares). These new development schemes for the two Bornean states are due to the shortage of land on the Peninsular. In 2007, Sarawak and Sabah represented 44 per cent of the total of the country's plantations and produced 43 per cent of the countries' production of palm oil.

In Sarawak in particular, the state government is aiming to double the area under cultivation between 2000 and 2010. Following the National Agriculture Plan (NAP 3), "oil palm is planned to take up over 2/3rds of the 6 million hectares allocated for agricultural expansion between 2000 and 2010".[70]

4.2.2.2 The Konsep Baru or the New Concept

Palm oil was introduced in Malaysia in 1917.[71] The New Economic Policy, initiated in 1970, contributed to the emergence of palm oil into the Malaysian economy, with the double goal of "*reduction and eradication of poverty*"[72] and "*restructuring of the Malaysian society to correct economic imbalances and eliminate the identification of race with economic function*". The Felda (the Federal Land Development Authority) widely participated in these efforts to open up new lands "for the re-settlement of the rural landless". Furthermore, the government provided strong institutional support to promote palm oil exports through the Palm Oil Registration and Licensing Authority (PORLA), the Palm Oil Research Institute of Malaysia (PORIM), and the Malaysian Palm Oil Promotion Council (MPOPC).[73]

65 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

66 *Ibid.*

67 Núñez, Raquel. 2005. Monocultures: The symbol of an outdated model. *World Rainforest Movement. Bulletin n°91*, February 2005.

68 Malaysian Palm Oil Council. 2007. Fact sheet – Malaysian Palm Oil.

69 *Ibid.*

70 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

71 Ahmad, Tengku Mohd Ariff Tengku Ahmad. 2001. The Case Study on the Malaysian Palm Oil. Regional Workshop on Commodity Export Diversification and Poverty Reduction in South and Southeast Asia, Bangkok.

72 *Ibid.*

73 *Ibid.*

The program especially developed by the Sarawak government for the development of NCR land is the 'Konsep Baru'[74] (literally, the 'New Concept'). It was introduced in 1995. The purpose of the Konsep Baru is to encourage the development of plantations in Sarawak. In theory, NCR landowners would form joint-venture companies with private companies. A 60 year lease would be issued by the joint-venture company, in order to exploit and develop the land. 60 per cent would be held by the private company, 10 per cent by the State land agency and 30 per cent by the NCR landowners. This process is done under the close surveillance of the Sarawak Land Development Board and the Land Custody Development Authority. The NCR landowners do not directly manage their land, as they have to sign the rights over their land to the 'Power of Attorney'. According to a Rengah Sarawak article,[75] the lack of accountability from the companies toward the NCR landowners leaves very little hope for the indigenous communities to reclaim their ancestral land.

In October 2002,[76] the Ambassador of Malaysia in Italy intervened at the First Meeting of the Parties to the Aarhus Convention, in Italy. His intervention underlined the paradoxes linked to Malaysia's economic priorities and environmental and public participation issues. In a certain way, he justified Malaysia's attitude toward the environment by putting forward the main priority of the country at the moment, which consists in eradicating poverty. This, in turn, raised the issue of the manner in which the country is developing its natural resources and economic assets: how much space is to be given to public participation in decision-making, especially regarding the environment – does this make education and information the fundamental conditions for public participation?

The fact that the Malaysian government wishes to reduce and eradicate poverty raises the issue of how to define and measure poverty. For this purpose, three different concepts[77] have been put forward: absolute poverty, absolute hardcore poverty and relative poverty. The first concept considers the gross monthly income in relation to the purchase of minimum necessities of life (including minimum food basket, clothing and footwear, rent, fuel and power, transportation and communication, health-care, education and recreation). Different poverty line incomes were created, depending on the location. The second concept, absolute hardcore poverty, designates the "condition in which the gross monthly income of a household is less than half of the Poverty Line Income. The last concept, relative poverty, enables the comparison of incomes between different groups, in order to put forward income disparities between different groups (according to income groups, ethnic groups or urban and rural groups).

For the three concepts, the importance of income to purchase basic products is the main criteria. However, in the case of the Penan tribes, for example, income is not necessary, traditionally, as they can find all their basic products in the forest. One may then express some doubts regarding the accuracy and efficiency of a program such as the Konsep Baru, which was initially based on such a definition of poverty.

4.2.2.3 The Destruction of the Rainforest and Consequences for Indigenous Tribes

Many NGOs have expressed their concern about the destruction of the rainforest in Borneo, and more specifically in the state of Sarawak. Indeed, studies have shown that the logging of trees, prior to the development of palm oil plantations, has significantly disturbed the biodiversity of the forest in many ways. A large number of big and valuable dipterocarp trees have been removed; a large portion of the primary forest has now been logged at least once; and the opening of the canopy has given way to a bushy secondary forest, as the remaining plants want to get closer to the sunlight.[78]

74 IDEAL. 1998. Konsep Baru of the NCR land development by Sarawak State Government. Rengah Sarawak. http://www.rengah.c2o.org/news/article.php?identifer=de0019t&subject=6 (Accessed 18 September 2009).

75 *Ibid.*

76 H.E. Ambassador Dato' Shamsudin Abdullah. 2002. Intervention notes by H. E. Ambassador Dato' Shamsudin Abdullah, Ambassador of Malaysia in Italy at the First meeting of the Parties to the Aarhus Convention, Italy.

77 Economic Planning Unit. 2004. Malaysia: 30 Years of Poverty Reduction, Growth and Racial Harmony. *Reducing Poverty, Sustaining Growth - What Works, What Doesn't, and Why: A Global Exchange for Scaling Up Success, Scaling Up Poverty Reduction: A Global Learning Process and Conference*, Shanghai.

78 BBC. 2009. The Penan. http://www.bbc.co.uk/tribe/tribes/penan/index.shtml (Accessed 3 September 2009).

For the last few years, areas in the forest from which the biggest and most valuable trees have already been logged, have been cleared completely;[79] licenses have then been delivered to oil palm companies, thus giving way to numerous palm oil plantations.

The rainforest, which used to provide a plentiful source of living for the Penan and Iban indigenous tribes, has lost some of its biodiversity. Plants used by the tribes are more difficult to find; fruit trees have been removed; watercourses are silted; animals hunted by the Penan, who traditionally are a tribe of hunter-gatherers, are more difficult to find.[80] The rainforest is now less productive, as large areas are being assigned to palm oil plantations.

Also, it has taken some time to acknowledge the destructive role of palm oil plantations. The latter, indeed, do not "directly" harm the rainforest, as they "*usually are located in areas that have been logged previously*".[81] However, in addition to being often settled on lands for which indigenous communities have rights, the plantations may cause "*soil erosion, alter the water cycle, eliminate other ecosystems and other forms of production and reduce biodiversity*".[82]

As mentioned in this section, indigenous tribes in Sarawak traditionally find everything they need to live in the rainforest. The expansion and development of the palm oil sector, especially with the rise of global demand for biofuels, raises not only environmental issues linked to the biodiversity of the rainforest. It also raises the issue of the representation of the indigenous tribes, and the amount of consideration given to their Native Customary Rights and land rights in the decision-making process.

4.3 The Legal Protection of Indigenous Rights

This section will examine the way in which indigenous rights are protected by international law and Malaysian law, and examine the extent to which these rights are respected. Through the survey conducted for the 2007 report Land is Life[83] on various Iban and Penan tribes from the rainforest in the state of Sarawak, we can assess the effectiveness of the legal protection of indigenous tribes.

4.3.1 Absence of Consideration of Indigenous Tribes

4.3.1.1 Absence of Information

One of the recurrent issues noticed throughout the case studies is the absence of information given to the tribes. In most cases, the government of Sarawak has signed 60-year leases over to palm oil companies. Thus the logging started on the lands to clear the planting areas, without having informed the local communities of the decision.[84] The logging, most of the time, involved areas on which the communities held Native Customary Rights (see definition in next section).

Also, in several cases, no information was given to the communities regarding the changes taking place within the companies, such as a change of manager or even the change of companies. This was the case for the Bidayuh Dayaks of Gumbang Asal Bau. SALCRA (Sarawak Land Consolidation & Rehabilitation Authority) started clearing the lands without informing the communities. In 1982, the same scheme happened on the NCR lands of the Bidayuh Dayaks of Kendaie, Pasir Hili & Pasir Hili Tengah, when

79 Survival International. 2007. Penan defy police with more blockades. http://www.survival-international.org/news/2366 (Accessed 13 September 2009).

80 BBC. 2009. The Penan. http://www.bbc.co.uk/tribe/tribes/penan/index.shtml (Accessed 13 September 2009).

81 Oil palm and soybean: two paradigmatic deforestation cash crops. *World Rainforest Movement Bulletin No. 85*, August 2004.

82 Núñez, Raquel. 2005. Monocultures: The symbol of an outdated model. *World Rainforest Movement. Bulletin No. 91*, February 2005.

83 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

84 *Ibid.*

the lands were first cleared by a palm oil company. During two or three years, the communities were not informed of the management of the company, which refused to answer the villagers' questions. Furthermore, in the case of the Iban Dayaks of Sungai Bawan, the lease was extended in 1989, without any consultation or negotiation with the community by the Government, through the issuance of a further 'Provisional Lease of State Land'.

4.3.1.2 The Absence of Invitation to Participate in Decision-making

The absence of invitation to participate in decision-making is clear since the Land is Life analysis[85] revealed an almost total lack of information given to the local communities. What appeared from every case examined in the survey was that decisions related to the management and the development of rainforest lands were made without negotiation or discussion with the communities. In one case, compensation was offered before, which means some information had been provided. However the compensation was not provided. In some other cases, compensation was offered after the land conversion. Though the compensation was never considered as being enough, it was sometimes accepted by some members of the communities - while others refused it, stating that their prime intention was to retrieve the right to use their lands. In 2007, the Penan of the Long Benali community refused "*a 'gift' of waterpipes from the Samling company, whose logging activities polluted their drinking water*".[86]

In addition to the absence of invitation to participate in decision-making, there have been some strong suspicions from the Penan towards disappearances of opposition leaders to the development and presumed extra-judicial killings. In 2000, the Swiss activist Bruno Manser disappeared and has since then been presumed to be dead. Prior to this, in the 1990's, two Penan also disappeared. In January 2008, Kelesau Naan, a Penan headman, was found dead under undetermined circumstances.[87] No formal proof of homicide has been given, as the mystery surrounding Kelesau Naan's death has not been cleared. The Penan community suspects the Sarawak authorities of not having investigated properly on the circumstances of his death.

Moreover, as tensions rise between the indigenous communities and the logging and oil palm companies, death threats have been given. In January 2009, a Penan community of Long Data Bila received death threats from an official of Samling, while a major land rights court case has been awaiting trial since 1998 against Samling.[88]

4.3.2 Attempts to Resort to Legal Means

4.3.2.1 The Protection of Indigenous Rights According to International, National and Local Frameworks, and their Interpretation by the State of Sarawak

At the international level, the United Nations Declaration on the Rights of Indigenous Peoples was adopted by vote at the United Nations General Assembly on the 13 September 2007. Malaysia voted in favor of this declaration. Article 32 specifically underlines the right of indigenous people to make decisions about the use of their lands and territories. It also states that governments have the duty to inform and ask for the peoples' consent before exploiting their lands; and to give a fair compensation according to the damage caused. Although just a declaration, it was seen as the result of twenty years of negotiations between states and indigenous peoples.[89] However, being solely a declaration, this document is non-binding. It mainly sets out basic standards to protect the rights of indigenous people, in the manner of a framework.

85 *Ibid.*

86 Survival International. 2007. Stars of BBC' Tribe' show in conflict with logging company. http://www.survival-international.org/news/2506 (Accessed 13 September 2009).

87 Survival International. 2008. Penan headman found dead, suspected murdered. http://www.survival-international.org/news/2879 (Accessed13 September 2009).

88 *Ibid.*

89 International Work Group for Indigenous Affairs. 2009. Declaration on the Rights of Indigenous Peoples. http://www.iwgia.org/sw248.asp (Accessed 13 September 2009).

There is another element that may contribute to the protection of indigenous rights in relation to palm oil and decision-making at the international level. This is the RSPO, the Roundtable on Sustainable Palm Oil. This non-profit association was founded in 2004. The purpose of the RSPO is to "*promote the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders*".[90] It unites any organisation that would have an interest in palm oil: "*oil palm producers, palm oil processors and traders, consumer goods manufactures, retailers, banks and investors, environmental or nature conservation NGOs and social or developmental NGOs*".[91] Currently, 305 organisations are members of the RSPO. Among the many functions assigned to the RSPO, one of them is to act as a platform to resolve conflicts linked to palm oil plantations, such as land right problems or environmental problems. Furthermore, it obeys and promotes principles and criteria that encourage sustainable palm oil use (the RSPO principles and Criteria for sustainable palm oil production).[92] Among these are: the "*environmental responsibility and conservation of natural resources and biodiversity*" and the "*responsible consideration of employees and of individuals and communities affected by growers and mills*". Some environmental NGOs have made critical comments about the RSPO Principles and Criteria, arguing that they were not rigorous enough "*to prevent further deforestation*".[93] Greenpeace, for one, has argued that any further destruction of forests in Southeast Asia should be banned.[94] However, companies are generally reluctant to go through the expense of producing certified oil, let alone to go beyond the RSPO process.

Regarding Sarawak law, the Native Customary Rights seem to be the most relevant when putting forward the rights of indigenous communities. Native Customary Rights, stated in the Sarawak Land Code 1958, indicate that one may claim ownership over a land in the following cases: "*the felling of virgin jungle and the occupation of the land thereby cleared; the planting of land with fruits; the occupation of cultivated land; the use of land for a burial ground or shrine; and the use of land rights of way*".[95] Proving NCR over the rainforest is quite difficult, as the Penan, for example, being hunter-gatherers, do not traditionally cultivate land that provides them their living (until recently). Moreover, the interpretation of the government of Sarawak has turned out to be quite restrictive. It does not consider "*hunting, gathering or the use of jungle produce*"[96] as being eligible for NCR. Thus, the right of indigenous communities does not seem to be recognised by the authorities of Sarawak, who have been signing 60-year leases as well as licenses over to palm oil companies, on lands which include NCR lands.

Furthermore, the possibility of making Social Impact Assessments and Environmental Impact Assessments has been limited by the fact that the Sarawak Government only accepts surveys made by licensed professionals who are registered with the Land Surveyor's Board.[97]

The main problem seems to be "*the lack of clear recognition by the Government of the extent of customary rights in land and lack of adequate consultation with community members prior to investment decisions being made.*"

4.3.2.2 The Issue of Representation within the Groups

Another problem raised by the development of palm oil plantations in Sarawak is the issue of representation inside the groups. The 2007 United Nations Declaration on the Rights of Indigenous People underlines the necessity of respecting indigenous people's voice through the means of their own representation organs.

90 Roundtable on Sustainable Palm Oil. 2009. What is RSPO? http://www.rspo.org/What_is_RSPO@.aspx (Accessed 13 September 2009).

91 *Ibid.*

92 Roundtable on Sustainable Palm Oil. 2007. RSPO Principles and Criteria for Sustainable Palm Oil Production, Including Indicators and Guidance.

93 Gooch, Liz. 2009. Bid to make 'green' palm oil advances. *International Herald Tribune.*

94 *Ibid.*

95 Agricultural Policies and Land Development Schemes. 2009. Defining Native Customary Rights to Land, in Chapter 3, '*Native Customary Land: The Trust as a Device for Land Development in Sarawak*', http://epress.anu.edu.au/apem/borneo/mobile_devices/ch03s02.html (Accessed 13 September 2009).

96 BBC. 2009. The Penan. http://www.bbc.co.uk/tribe/tribes/penan/index.shtml

97 BBC. 2009. The Penan. http://www.bbc.co.uk/tribe/tribes/penan/index.shtml (Accessed 13 September 2009).

In the case of the Iban Dayaks of Rumah Rayong, the company did not recognise Rayong Ak Lapik as the headman of the tribe, while he was trying to defend the rights of his community.[98]

In many other cases, the companies dealt directly with community leaders, who discussed agreements without consulting their communities.[99]

The report from the RSPO workshop on "*Free, Prior and Informed Consent*" held in Miri, Sarawak in August 2008[100] brings forward other issues linked to representation inside the groups. One of these issues is the problem of community leaders being corrupted: "*In some cases leaders had been bought off with personal rewards and were making decisions against the wider communities' interests*". Another issue is the fact that "*Longhouse headmen ('tuai rumah' and tua kampong') and the village development communities (JKKK), as the officially recognised bodies representing the communities, are often fearful of government and reluctant to voice community concerns*".

In September 2008, "*the Government of Sarawak officially announced that it will no longer recognise elected leaders in some Penan communities. Leaders who are no longer officially recognised would not receive their monthly allowance from the government*".[101] Consequently, Saund Bujang, the headman of a Long Benali Penan community, was deposed by the government of Sarawak, who is trying to install a pro-Samling leader in his place (this also raises the issue of division among the indigenous communities, and especially the Penan, which we will develop later). The headman of the Long Benali, Bilong Oyoi, who happens to be "*one of the leading plaintiffs in a Penan land rights claim that has been pending since 1998*", has also been deposed. Regarding the case of the Long Kerong community, whose headman Kelesau Naan was found dead in vague circumstances, the government of Sarawak has also refused to recognise the new headman, who had been elected by the community. Finally, the elected headman of Long Lamai has also not been recognised by the authorities. In this last case, the community filed a land rights litigation against Samling and the Sarawak state government in April 2007 (all these examples have been taken from the Survival International archives).

4.3.2.3 Pending Court Cases

Many court cases regarding NCR have been filed against companies, the State Government and other state authorities, such as the Lands and Surveys Department. Most are awaiting trial or judgment. The case of the Rumah Lasan and Rumah Timboo communities,[102] in 2006, against the Superintendent of Lands and Survey Department, the State Government and the Sarawak Oil Palm Berhad, has given some encouragement to the other communities, even though the process had been a very long one (the charges had been filed in 1998). The ruling was made in favour of the plaintiffs.

In 2008, the Rumah Nor case against fourteen Iban people who had been accused of "allegedly occupying state land illegally",[103] also gave some encouragement. The judge cleared the defendants of criminal charges, as the latter claimed that they held NCR on the land that they had been occupying.

In May 2009, another court decision showed some encouragement for the indigenous tribes. The Malaysian Federal Court ruled that, "*indigenous people in Sarawak, in the Malaysian part of Borneo, have*

98 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

99 *Ibid.*

100 Colchester, Marcus. 2008. The Roundtable on Sustainable Palm Oil and the right to Free, Prior and Informed Consent, Report of 3rd and 4th Series of Training Workshops on Free, Prior and Informed Consent and the RSPO.

101 Survival International. 2008. Government ousts tribal leaders who oppose logging. http://www.survival-international.org/news/3744 (Accessed 14 September 2009).

102 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

103 Thien, Tony. 2008. Rumah Nor court victory http://www.borneoproject.org/article.php?id=746, (Accessed 18 September 2009).

rights to land they use for hunting and gathering as well as land they use for growing food".[104] Basing this on NCR, this court decision shows an expansion of the interpretation of these land rights, at least in relation to the way in which the Sarawak authorities had interpreted them until now. However, according to a Survival International article,[105] the government of Sarawak still refuses to recognise land rights for the indigenous communities, and has ignored the Federal Court ruling.

In most cases, legal action through court cases takes a very long time. At the moment, there are about 200 land rights cases awaiting trial.[106] Also, once the court decision has been given, there is no guarantee as to whether the decision will be respected by the government of Sarawak and the companies. This is the reason why indigenous communities are forced to resort to alternative means to protect their rights. In the following section, we will attempt to assess the effectiveness and the limits of these alternative means to protect indigenous rights, through actions undertaken both at the local level and at the international level.

4.4 Alternative Means to Protect Indigenous Rights: Effectiveness and Limits

For the last twenty years (ever since the first logging companies arrived in the Sarawak forest), the indigenous people of Sarawak have been finding ways to protest and fight against the arrival of logging companies and oil palm companies in the Sarawak forest. Both at the local and at the international levels, these alternative actions have reached some limits in their effectiveness, whether through direct or indirect means.

4.4.1 Actions at the Local Level

4.4.1.1 Blockades and Letters

For the indigenous tribes of Sarawak, the most direct means through which they try to gain respect for their rights are road blockades. Although these remain peaceful most of the time, there can also be some confrontation with the authorities and the police when they attempt to dismantle the blockades.

Among the most recent cases of road blockades is the case of the Penan of Long Benali blockade against Samling. The area where the blockade was set was certified for 'sustainable' logging by the Malaysian Timber Certification Council (the MTCC): "*however, the certification fails to acknowledge that this 'sustainable logging' is on the Native Customary Land of the Penan people, who have never given their consent for logging to take place*".[107] Thus this blockade had been set since February 2004. It was meant to be dismantled by the Sarawak authorities in June 2006. However, a vast quantity of letters and emails of protest managed to postpone the dismantling. Be that as it may, in April 2007,[108] the blockade was dismantled by the Sarawak Forestry Corporation, with the support of the police, by force and without negotiation.

104 Survival International. 2009. Landmark court ruling could help tribes stop deforestation and oil palm plantations. http://www.survival-international.org/news/4533 (Accessed 14 September 2009).

105 Survival International. 2009. Government ignores land rights ruling. http://www.survival-international.org/news/4741 (Accessed 14 September 2009).

106 Survival International. 2009. Landmark court ruling could help tribes stop deforestation and oil palm plantations. http://www.survival-international.org/news/4533 (Accessed 14 September 2009).

107 Survival International. 2007. Police clear Penan blockade. http://www.survival-international.org/news/2228 (Accessed 14 September 2009).

108 Survival International. 2007. Armed police dismantle Penan logging blockade. http://www.survival-international.org/news/2345 (Accessed 14 September 2009).

In many cases of road blockades, the action is a result of several communities or villages, either sedentary or nomadic tribes. Thus in April 2007,[109] five new blockades by four Penan villages and one nomadic group were set up, against Rimbunan Hijau, KTS Logging and Samling; one of the main logging routes was blocked. In October 2008,[110] four communities from the Middle Baram area (Ba'Abang, Long Item, Long Kawi and Long Pakan) organised a blockade against Interhill. In August 2009,[111] twelve Penan villages came together to mount road blockades in three new locations. The targets of this last case were Samling, Interhill, Rimbunan Hijau and KTS.

Cooperation among the different tribes has shown some efficiency in some cases. For example, in June 2009,[112] a blockade at the settlement of Ba Marong made a KTS subsidiary withdraw.

Other alternative actions used by the indigenous tribes of Sarawak have been more indirect; their effects have been more mitigated.

In April 2009,[113] the French hotel group ACCOR was planning to collaborate with Interhill to build a new hotel in Kuching. However, seventy Penan signed a letter of protest to the ACCOR CEO Giles Pelison, in order to stop the project. A month later,[114] following the pressures issued by the Penan, ACCOR agreed to review its cooperation with Interhill.

Attempts to discuss and negotiate were made by the Iban Dayaks of Lebor, who formed a Village Action Committee on Land Rights.[115] Discussions were held at the police station, where the companies (Nirwana Muhibbah Sdn Bhd) and the LCDA (Land Custody and Development Authority) agreed to pay some compensation. They did not pay any compensation as agreed.

Likewise, the Iban Dayaks of Sungai Bawan sent letters of protest to the authorities.[116] In reaction to the lack of response, they decided to organise route blockades, which lasted from November 2005 to March 2007.

The Iban Dayaks of Selezu, Sepadok and Setulai have sent police reports and letters of protest to many officials: the Sarawak Chief Minister and the Land Minister, the Malaysian Police Headquarters in Kuala Lumpur, the head of the Sarawak police in Kutching, the District Office and the Resident Office and area headman. However, the only answer received was from the Assistant Minister, which was not sufficient for the tribes. Due to the lack of answer from the authorities, a road blockade soon followed; the companies then agreed to pay compensation. However the amount was considered as insufficient, and the tribes refused to take it.

These two last cases show that more direct action (route blockades) often follows the failure of indirect action.

4.4.1.2 Limited Effectiveness

Direct and indirect actions have had mild results. There is no standard rule for the failure or the success of direct or indirect alternative means of protest. In some cases, results and responses from the companies and the Sarawak authorities have been encouraging; in other cases, the results were unsatisfactory and led to more radical and direct means.

109 Survival International. 2007. Penan defy police with more blockades. http://www.survival-international.org/news/2366 (Accessed 14 September 2009).

110 Survival International. 2008. Penan mount logging road blockade. 8 October 2008. http://www.survival-international.org/news/3786 (Accessed 14 September 2009).

111 Survival International. 2009. Logging protests spread in Borneo as nomads block roads. http://www.survival-international.org/news/4889 (Accessed 14 September 2009).

112 *Ibid.*

113 Survival International. 2009. Penan slam French hotel group's cooperation with Borneo loggers. http://www.survival-international.org/news/4506 (Accessed 14 September 2009).

114 Survival International. 2009. French hotel group to review cooperation with Borneo loggers. http://www.survival-international.org/news/4593

115 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

116 *Ibid.*

Generally, the attitude of the authorities has been more in favour of the logging and palm oil companies, in the name of development and the Konsep Baru. Even peaceful protests can lead to arrests and court charges, as was the case for the Iban Dayaks of Rumah Rayong.[117]

Another issue has limited the affects of alternative protest actions by the indigenous tribes. This is the issue of division, not only among the tribes, but also within the tribes. For example, as most Penan ferociously oppose the destruction of the rainforest and the development of palm oil plantations, others find some advantage in the presence of the companies in Sarawak: job opportunities, "free transport, cash compensation, material goods and other assistance".[118] Between those two categories, some have an ambivalent position: most are strongly opposed to logging, but will still turn to the companies for help. Blockades then become a negotiating tool, as opposed to a radical means that would make the companies leave the forest for good. Overall, there is a consequent lack of trust between the Penan and the government, which makes discussion and negotiations all the more complex.

To defend Native Customary Rights in opposition to palm oil companies, actions at the local level have been numerous. However, their relative success has drawn the attention of the international media to the issues linked to the destruction of the rainforest and the development of oil palm plantations.

4.4.2 International Support

4.4.2.1 The International Media Campaign

The situation of indigenous tribes, land rights and the development of palm oil plantations has received a certain amount of support and attention from the international community, through the spotlight of the media. Indeed, international NGOs have used their skills and links to the media to raise awareness of the issues. The Penan tribes, in particular, were under the spotlight of the international media for some time.[119] This campaign was mainly due to the commitment of Bruno Manser, a Swiss activist devoted to helping indigenous tribes, and particularly the Penan from the rainforest. Popular figures, often involved with environmental and nature prevention causes, have met with some Penan leaders, including Al Gore and Prince Charles. This well-orchestrated campaign led to the Penan situation being raised at the United Nations General Assembly and the Rio Earth Summit. However, as the attention of the media turned to other issues, the logging and development of oil palm plantations continued to expand and destroy the rainforest.

The action of Survival International, as cited in the introduction, has also had some positive effects. This London-based NGO is dedicated to the protection of tribal people's rights throughout the world. Through articles regularly put online about the situation of the Penan tribes in Sarawak, Survival International has helped to keep the international public opinion informed of different actions and developments. By doing this, they have managed to push "*tribal issues into the political and cultural mainstream*".[120] In addition to this, the worldwide movement was the first in its field "*to use mass letter-writing*" as a means to pressure decision makers, which they have done for the Penan tribe of Sarawak for specific issues. Also, in August 2008,[121] Survival International launched a raffle to help the Penan. Finally, in April 2009, Miriam Ross, a Survival International campaigner, went to Sarawak in order to investigate the "*dam and biofuel threats to the Borneo tribes*" (quoted in the introduction).[122]

117 Colchester, M., Pang W. A., Chuo, W. M., Jalong, T. 2007. Land is Life: Land Rights and Oil Palm Development in Sarawak. *Forest Peoples Programme and Perkumpulan Sawit Watch*.

118 BBC. 2009. The Penan. http://www.bbc.co.uk/tribe/tribes/penan/index.shtml (Accessed 13 September 2009).

119 *Ibid.*

120 Survival International. 2009. About us. http://www.survival-international.org/info

121 Survival International. 2008. Survival launches raffle in aid of Penan. http://www.survival-international.org/news/3589 (Accessed 14 September 2009).

122 Survival International. 2009. Survival campaigner investigates dam and biofuel threats to Borneo tribe. http://www.survival-international.org/news/4425 (Accessed 14 September 2009).

The well-orchestrated campaign that surrounded the Sarawak forest and the Penan was encouraged by the Swiss activist Bruno Manser and is widely known globally. After having lived with the Penan tribes for six years and studied their culture and way of living, the environmental activist and human rights defender came back to Switzerland and created the "Bruno Manser Fund", dedicated to the protection of the Sarawak forest and its peoples. He managed to attract the attention of the international media through many actions: lectures, demonstrations, hunger-strikes, parachute jumping, exhibitions, books… More recently, in April 2008,[123] (seven years after the Swiss-activist disappeared in the Bornean forest in 2001), the Bruno Manser Fund presented a "Penan picture archive" online, in order to "help the Penan to draw the attention to the destruction of their forests in the international media".

Finally, in 2007, the BBC 'tribe show' starred a Penan community.[124] The amount of attention given to the Penan through the television series led to the Malaysian authorities threatening the Malaysian timber company Samling of loosing their 'certificate for sustainable management'.[125] This certificate for 'sustainable' logging was awarded to the company in 2005. It is necessary for the company to export wood to Europe and other countries.

4.4.2.2 The Limits of International Support

It does not always appear that much practical consideration has been given to the indigenous tribes when compared to support for natural economic development.

In 2005, the British government wished to put a ban on palm oil exports, realising that it was environmentally destructive. It was advised not to do so for the reason that it "*would greatly increase the risk of international legal challenge to the policy as a whole*".[126] Nevertheless, the British government decided to go ahead and use biofuels in order to respond to increasing demand for travelling, as well as international and European policies to deal with climate change. The case of the British government, among others, shows the ambiguous interpretations of associated ethical issues that governments may have toward importing palm oil in order to use it as biofuel.

On 30 June 2009, the founder and chairman of the Rimbunan Hijau group (a Malaysian logging company) was given an honorary knighthood by Queen Elizabeth II for "services to commerce, the community and charitable organizations in Papua New Guinea". This may also show some paradoxes coming from the attitude of the UK Royal Family, as Prince Charles and his NGO Friends of the Earth have shown, in the past, a strong interest in the cause of the Penan and the development of palm oil plantations.

4.5 Conclusion

Palm oil used as a biofuel does indeed have a positive effect on the environment, at least in the short-term. The increasingly high demand for this product has therefore encouraged the authorities of Sarawak to develop even more plantations in the areas where the forest has already been logged to a certain point. In addition to the environmental issues raised by the expansion of palm oil plantations, the representation of indigenous communities in this whole process is very questionable, thus raising a major paradox in the development of this economic asset. Attempts to solve the lack of consideration and representation of indigenous tribes in the decision-making process have been made through legal means, but the urgency of the situation added to the slowness of the legal process, leading the communities to resort to alternative means and more direct actions to try and defend their rights.

One central ethical issue throughout the case study concerns environment and indigenous rights: to what extent do the state authorities have the right to interfere with the rainforest, in the name of

123 Survival International. 2008. Penan picture archive online. http://www.survival-international.org/news/3253 (Accessed 14 September 2009).

124 BBC. 2009. The Penan, Malaysia. http://www.bbc.co.uk/tribe/ (Accessed 14 September 2009).

125 Survival International. 2007. Stars of BBC. Tribe's show in conflict with logging company. http://www.survival-international.org/news/2506 (Accessed 14 September 2009).

126 Monbiot, George. 2006. The most destructive crop on earth is no solution to the energy crisis. *World Rainforest Movement Bulletin No. 102*, January 2006.

economic interests and development? On the one hand, the palm oil sector is an enormous economic asset for the country, and a unique opportunity and promise for Malaysia to become a fully developed country. On the other hand, it is a threat towards the rainforest and its biodiversity, and it ignores basic rights of representation and participation for the indigenous communities. Consequently, one may wonder whether the economic promise of the palm oil sector truly gives the state the right to mingle with the rainforest and encourage its destruction, as well as bypass the basic democratic right of fair representation and participation in decision-making.

5. Uranium Mining in Australia and the Olympic Dam Mine in South Australia

5.1 Introduction

This chapter[127] examines uranium mining in Australia, and specifically concentrates on the proposed expansion of the Olympic Dam mine in South Australia, that would more than double the mine's present production capacity. The Olympic Dam mine is a multi-mineral ore site that contains the world's largest known uranium deposit. It started production in 1988, and is currently managed by BHP Billiton[128] – a leading multinational corporation in the resources industry.

First we discuss the present Australian government policy in relation to uranium mining and export. This chapter then focuses on the environmental, economic and social effects of uranium mining, public representation in the decision-making process, and opportunities for stakeholder consultation, related to the expansion of the Olympic Dam mine. An Environmental Impact Statement commissioned by BHP Billiton for the expansion proposal is also examined in relation to provision for public participation. Through this analysis, an examination of how principles of ecologically sustainable development affect processes of decision-making in Australia is made.

The second half of this chapter discusses the impact of uranium mining on indigenous communities, and portrays the significance of land to these communities. The land on which the Olympic Dam mine sits bears great spiritual and cultural significance to various Aboriginal communities, and has resulted in Aboriginal protests against the mine's expansion, thus making it important to examine whether or not Aboriginal communities have been afforded adequate representation in respect of the mine's expansion. Major instruments relevant to indigenous rights are described in order to assess Australia's consistency with international standards in its treatment towards the Aboriginal population. Finally, this chapter depicts instances where Aboriginal communities have succeeded in campaigning against mining activities on traditional land.

5.2 Australia's Uranium Resources

As of 2009, Australia is the world's eighth largest producer of energy, accounting for 2.4 per cent of the world's energy production. Australia's energy supply is used for export purposes and to fulfil domestic consumption demands. Energy exports comprised 66 per cent of Australia's energy production in 2009, with domestic consumption accounting for the remaining 34 per cent. Australia's energy production is dominated by energy produced from coal, which provides for around 54 per cent of the country's total primary energy production in 2007, followed by uranium which provided for 26 per cent, and natural gas which provided for 11 per cent. Crude oil and liquefied petroleum gas accounted for seven percent of total energy production, whereas biogas, biofuels, wind and solar energy accounted for around two per cent of energy production. In 2007 to 2008, Australia's energy production increased by 1.6 per cent, mainly as a result of a 5.3 per cent rise in uranium oxide production.[129]

Australia is involved in uranium mining and the export of uranium. Its uranium mines currently provide for nearly one quarter of the world's mined uranium, whereas it uranium resources account for 38 per cent of total world uranium resources. Uranium deposits were discovered in Australia since the 1890s. The first few uranium mines consisted of the Rum Jungle project in the Northern Territory, the Radium Hill and Mount Painter projects in South Australia, and the Mary Kathleen project in Queensland. In the 1930s, uranium ores were mined at Radium Hill and Mount Painter to extract radium for medicinal uses. Uranium was also provided for United Kingdom's atomic weapons program, as in the case of uranium deposit discovered at Rum Jungle in 1949.

127 This Chapter is written by Ms. Raine Boonlong.

128 More information on BHP Billiton at http://www.bhpbilliton.com

129 Australian Government. *Energy Update 2009*. http://www.abareconomics.com/interactive/energyUPDATE09

Australia's identified uranium resources have doubled over the past two decades, with most of these resources located in South Australia, the Northern Territory and Western Australia. Exports of uranium oxide have reached almost 10,000 tonnes a year, constituting approximately 37 per cent of Australia's energy exports.[130] It is important to note that uranium sold by Australia is requested to be used strictly for the production of electricity. Although Australia contains around 38 per cent of the world's uranium resources, due to political constraints, Australia has not been able to expand its uranium industry to its maximum potential and at present supplies 19 per cent of the world's uranium market.

Uranium mining has constituted a considerable part of the political debate in Australia. For several decades, opposition groups against nuclear have been manifesting, often alluding to environmental damage, health risks associated with radiation, nuclear proliferation and infringements of indigenous land rights as justifications to the restriction of the uranium mining industry. The Rudd Government currently prohibits the generation of nuclear energy, however it remains a possibility considering carbon constraints. According to the Australian Uranium Association, Australia's current exports, which amount to 10,000 tonnes a year – when used to fuel nuclear power stations, assist in preventing around 400 million tonnes of greenhouse gases from being emitted each year that would be otherwise emitted by fossil-fuelled power stations.[131]

5.3 Australia's Nuclear Policy

In 1984, the Labour Government implemented the Three Mines Policy, which limited the number of uranium mines in Australia to three, consisting of the Ranger mine and the Nabarlek mine in the Northern Territory, and the Olympic Dam mine in South Australia. Since the Coalition Government was elected in 1996, the Three Mines Policy was abolished, resulting in the approval of additional mines in South Australia, namely, the Four Mile uranium mine and the Honeymoon uranium mine. Uranium exploration and mining is permitted in South Australia, the Northern Territory and Western Australia. In Queensland, uranium exploration is permitted but uranium mining is prohibited, whereas in New South Wales and Victoria, uranium exploration and mining are prohibited.

In 1973, former Australian Prime Minister Gough Whitlam ratified the Treaty on the Non-Proliferation of Nuclear Weapons.[132] Since then successive Australian governments have upheld the image of Australia as a determined supporter of nuclear non-proliferation, as reflected in its nuclear policies. The Australian Safeguards and Non-Proliferation Office (ASNO) operates as the country's national safeguards authority. It overlooks the performance of Australia's safeguards and non-proliferation commitments, and assists in implementing the International Atomic Energy Agency (IAEA) safeguard activities in Australia.

Australia's uranium export policy stipulates that exported uranium and its derivatives may only be used for 'peaceful non-explosive purposes', and must not be used to benefit the development of nuclear weapons, or be used in other military programmes. Australia also requires for customer countries to commit to a bilateral safeguards treaty.[133]

Prime Minister Kevin Rudd has articulated that the Australian government will not allow uranium to be used to generate electricity domestically, and that uranium from Australia is only sold to countries that are signatories to the Nuclear Non-Proliferation treaty (NPT).[134] According to the Australian Labor Party, "*Labor will allow the export of uranium only to those countries which observe the NPT, are committed to non-proliferation policies, have ratified international and bilateral nuclear safeguards agreements and*

130 World Nuclear Association. *Australia's Uranium and Nuclear Power Prospects*. www.world-nuclear.org/info/inf48.html

131 Australian Uranium Association. *Australian Uranium Industry*, www.aua.org.au

132 The only countries that have not ratified the NPT are India, Israel, Pakistan and North Korea – all of which have nuclear weapons.

133 Australian Department of Foreign Affairs and Trade. *The Nuclear Non-Proliferation Treaty (NPT)*. www.dfat.gov.au

134 ABC News. *Rudd Ridicules Opposition's Nuclear Push*. www.abc.net.au/news/stories/2009/07/23/2634719.htm (accessed 23 July 2009).

maintain strict safeguards and security control over their nuclear power industries."[135] Resources Minister Martin Ferguson has insisted that Australia has sufficient resources of inexpensive coal and gas, as well as renewable energy resources to satisfy its energy requirements. Currently, the Rudd government and energy industries are profoundly investing to develop clean-coal technologies through carbon capture and storage.[136]

The Australian Uranium Association (AUA) planned to analyse the present state of development of uranium-fuelled nuclear energy technology in order to compare it with the current progress of other energy technologies. For this, the AUA commissioned Professor Manfred Lenzen of the University of Sydney's Centre for Integrated Sustainability Analysis to produce a detailed revision on the state of nuclear electricity generation technology, as well as other renewable and non-renewable generation technologies. In June 2009, the Lenzen report released that "*the generating technologies currently available to provide base-load electricity are either fossil fuel-based or nuclear power or, in some cases, hydro-power*", and that "*nuclear power and power from renewables are the most effective technologies for minimizing greenhouse gas emissions; they have significant mitigation potential and low energy requirements*." In this sense, nuclear energy is the only presently available 'clean' energy with the ability to produce base-load electricity. Nuclear energy was found to be a low-carbon source of electricity with the potential to avoid 180 billion tonnes of carbon dioxide emissions up to 2100. Professor Lenzen also ascertained that "*the fossil fuel-based technologies cost least, followed by nuclear and wind, then hydro and then solar*", discrediting the view that nuclear power is a highly subsidized, high-cost technology with a limited future. According to the AUA, the Lenzen report demonstrated Australia's uranium exports to be a secure and stable alternative fuel for the large-scale generation of electricity, although it acknowledges the public acceptance issue related to nuclear power and uranium mining.[137]

A survey conducted by the Lowy Institute in 2008 demonstrated that Australians are progressively more willing to accept the use of nuclear power, due to the need to reduce global carbon emissions and the rising energy demands.[138] However, a Newspoll survey conducted by the Australian Conservation Foundation (ACF) indicated that 40 per cent of Australians are opposed to the export of Australian uranium to any country for electricity generation purposes, and that a further 22 per cent were opposed to the export of uranium to countries that possessed nuclear weapons, even if these countries had signed the nuclear Non-Proliferation Treaty (NPT). Speakers at the World Nuclear Fuel Cycle expressed that Australia is not taking advantage of its considerable uranium resources, citing State bans on uranium mining and the previous Three Mines Policy as examples.[139]

5.4 Uranium Mines Operating in Australia

There are currently three uranium mines operating in Australia:[140]

Ranger Mine in the Kakadu National Park, Northern Territory. This mine began operations in 1981. It is owned by Energy Resources of Australia Ltd (ERA), which is now a subsidiary of Rio Tinto. Its annual production capacity started out at 3,300 tonnes per year, and has since increased to 5,500 tonnes per year.

Olympic Dam (Roxby Downs) mine in South Australia. The Olympic Dam deposit was first discovered in 1975 by Western Mining Corporation. It began operations in 1988, and started out as a joint venture of

135 ALP National Policy Committee. *Labor Party Consultation Draft National Platform* 2009.

136 The Australian. *PM Rudd Told Nuclear Is Best Hope By Rio Tinto*. http://www.theaustralian.news.com.au/story/0,25197,25817955-601,00.html

137 Australian Uranium Association. *Lenzen Report on Electricity Generation*. http://aua.org.au/Content/Lenzenreport.aspx

138 The Interpreter. *Cross-pollination: Australia's Nuclear Futures*. www.lowyinterpreter.org

139 Australian Mining. *Australians Against Uranium Expansion*. http://www.miningaustralia.com.au/Article/Australians-against-uranium-expansion/430463.aspx

140 A fourth operation, the Honeymoon mine in South Australia, is due to begin in 2010.

Western Mining Corporation and BP Minerals. The Olympic Dam has been owned by BHP Billiton since 2005. Its annual production capacity of uranium oxide has increased from 1,800 to 4,600 tonnes.

Beverley mine in South Australia. It started operation in 2000, and is owned and operated by Heathgate Resources Pty Ltd, an associate of General Atomics in the USA. By 2004, it was producing 1,180 tonnes of uranium oxide per year.

Most of the world's nuclear power reactors require enriched uranium fuel. Currently, there are 439 operating nuclear reactors throughout the world. An additional 221 nuclear reactors are proposed to be built by 2030.[141] Uranium oxide mined in Australia is usually shipped through the Ports of Darwin and Adelaide to customer countries including United States of America, Japan, Republic of Korea, South Africa, Spain, France, United Kingdom, Sweden, Germany, Belgium and Finland. China has recently become a customer country for Australian uranium. The uranium oxide is delivered to enrichment plants for further processing into fuel.

Notably, Australia is the preferred uranium supplier in East Asia, where uranium demand is rapidly increasing.[142] Federal Resources and Energy Minister Martin Ferguson is of the belief that Australia should increase both uranium mining and exports to fulfill China's anticipated nuclear expansion as Australia's discussions with China in late 2008 have demonstrated that there will be an increase in Chinese demands. As stated by Ferguson, "*We are, as a nation, a leading nation in terms of uranium mining…We should be actually mining more than we are at the moment.*"[143]

5.5 Case Study of the Olympic Dam Mine in South Australia

The Olympic Dam mine is located 560 km north of Adelaide, South Australia, on formerly pastoral land. It is colloquially known as Roxby Downs, which is the name of a nearby town where the miners reside. The Olympic Dam mine is a multi-mineral ore site, with refined copper being the major product. It is the world's fourth largest known copper and gold deposit, with considerable amounts of silver, as well as a large producer of uranium oxide and is the world's largest known uranium deposit. The Olympic Dam mine's current operation on a global scale ranks sixteenth largest in copper production and third largest in uranium.[144]

BHP Billiton, the world's largest diversified resources company, manages the Olympic Dam.[145] As of 30 June 2008, it has around 41,000 employees working in more than 100 operations across 25 countries. BHP Billiton's aim of being a premier global company has resulted in it securing significant positions in major commodity businesses, such as aluminium, energy coal and metallurgical coal, copper, manganese, iron ore, uranium, nickel, silver and titanium minerals, as well as holding extensive interests in oil, gas, liquefied natural gas and diamonds.[146] BHP Billiton's existing operation at Olympic Dam affirms contracts in South Australia with a value amounting to more than half a billion dollars per year.

141 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Executive Summary.

142 World Nuclear Association. *Australia's Uranium and Nuclear Power Prospects*. www.world-nuclear.org/info/inf48.html

143 Australian Mining. *Increase Uranium Mining. Ferguson*. http://www.miningaustralia.com.au/Article/Increase-uranium-mining-Ferguson/475775.aspx

144 World Nuclear Association. *Australia's Uranium and Nuclear Power Prospects*. www.world-nuclear.org/info/inf48.html

145 In May 2009, BHP Billiton submitted documents to develop Australia's first new uranium mine in more than 20 years, it's most recent uranium mine being the Olympic Dam in 1998. The new uranium mine is referred to as the Yeelirrie mine, and is located in Western Australia. The Yeelirie mine is planned to produce an average of 5,000 tonnes of uranium per year over a life of more than 30 years. In relation to South Australia, apart from the Olympic Dam uranium resource, there is a range of new uranium mines being developed and proposed, together with 81 uranium exploration licences now issued (Australian Mining).

146 BHP Billiton. *Our Profile*. www.bhpbilliton.com/bb/aboutUs/companyOverview/ourProfile.jsp

5.5.1 Proposed Expansion of the Olympic Dam Mine

BHP Billiton has made a proposal estimated by industry experts to amount between A$10 to A$15 billion in order to greatly expand the Olympic Dam mine's existing mining and processing operation. On 1 May 2009, BHP Billiton released its 4600-page Environmental Impact Statement for the venture. The aim of the proposed expansion is to make use of the full potential of the deposit to satisfy the increasing global demand for copper and uranium. BHP Billiton's plan is to move from underground to open cut mining, and to establish required infrastructure over a period of 11 years. The proposed expansion will result in the mine's production of copper concentrate rising from 600,000 tonnes per annum to 2.4 million tonnes per annum; refined copper from 235,000 tonnes per annum to 750,000 tonnes per annum; gold bullion from 100,000 ounces per annum to 800,000 ounces per annum; silver bullion from 800,000 ounces per annum to 2.9 million ounces per annum; and uranium oxide from 4,500 tonnes per annum to 19,000 tonnes per annum (which will lead to the Olympic Dam being the largest producer of uranium oxide in the world). Of the 2.4 million tonnes per annum of copper concentrate produced, 1.6 million tonnes would be exported. BHP Billiton estimates that this 1.6 million tonnes of copper concentrate would contain approximately 1,500 tonnes of uranium oxide, which would generate a gross value of around US$ 230 million per annum.[147]

The major items of infrastructure required for the expansion would include a coastal desalination plant, either an additional electricity transmission line or a gas pipeline (or both), a rail line, a new airport, a landing facility, additional port facilities, a new accommodation village for workers, and an expansion of the Roxby Downs township. This expansion proposal requires the consent of the Australian, South Australian and Northern Territory governments.[148]

Under the South Australian Government's Strategic Plan, expansion of the resource segment is strongly encouraged in order to expand the State's economy. BHP Billiton claims that if the governments were to grant an approval for the expansion, BHP Billiton's commitment to substantial investment at Olympic Dam would increase direct employment in the area by more than twice, to 8,000 permanent workers and 13,000 flow-on jobs. The expansion would also increase opportunities for third-party businesses, and increase government and export revenues.[149] Currently, the Olympic Dam operation contributes A$1.7billion per year to the Gross State Product (GSP) of South Australia. The estimated contribution of GSP over a period of 30 years from the start of Olympic Dam's expansion would amount to A$45.7 billion in net present value above the business-as-usual case, equivalent to an average annual increment of A$6.9 billion at full operating capacity. Since 2006, the Olympic Dam's royalty revenue to the South Australian Government from the existing operation has reached an average of nearly A$60 million annually. The expansion of the mine is predicted to bring about an increase in royalty revenue by more than four times.[150]

5.5.2 Stakeholder Consultation and Decision-Making Process

'Stakeholders' have been identified by BHP Billiton as "*people who are adversely or positively impacted by our operators, those who have an interest in what we do, or those who have an influence on what we do*". BHP Billiton claims that it engages regularly with employees and contractors, non-indigenous and indigenous communities, as well as with shareholders and customers in order to ensure sustainable communities. Since 2005 it has established a consultation and engagement programme to determine issues and concerns about the expansion, and to ensure that these concerns have been taken into account in the expansion plans.

147 Australian Journal of Mining. *World's Biggest Open Pit Operation Could Be A Reality*. http://www.theajmonline.com.au/mining_news/news/2009/june-18th-09/world2019s-biggest-open-pit-operation-could-be-a-reality

148 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Information Sheet.

149 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Executive Summary.

150 Australian Journal of Mining. *World's Biggest Open Pit Operation Could Be A Reality*. http://www.theajmonline.com.au/mining_news/news/2009/june-18th-09/world2019s-biggest-open-pit-operation-could-be-a-reality

BHP Billiton's program of consultation and engagement included:

- local and state-wide newspaper advertising of information and consultation sessions;
- a telephone line, email address and an Olympic Dam Environmental Impact Statement website to provide project information and receive feedback;
- local community focus groups, briefings and workshops;
- two telephone surveys of more than 1,700 people to research opinions towards the expansion,
- display at public events.[151]

Around 8,300 people were involved in the community consultation and engagement events held in Roxby Downs and surrounding communities including Eyre Peninsula, Upper Spencer Gulf, metropolitan Adelaide and the Northern Territory.[152] BHP Billiton also claims that it aims to persist in its contribution to local communities by providing employment opportunities, and by assisting organisations that help to create a sustainable environment in those communities. BHP Billiton has established the following community programs:

- Arid Recovery: the objective being to facilitate the restoration of arid zone ecosystems, and to re-introduce locally extinct species of fauna;
- BHP Billiton Youth Arts Fund: to provide young South Australians with opportunities to access high standard artistic programs.[153]

5.5.3 Environmental Impact Statement (EIS)

BHP Billiton's Draft Environmental Impact Statement (EIS) provides a description of the expansion project, and lays out the potential environmental, social, cultural and economic issues that might emerge during the project's construction, operation and closure, and BHP Billiton's expedients in administering these challenges.[154] Specifically, the expansion requires approval from:

- the Australian Minister for the Environment, Heritage and the Arts under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999*;
- the South Australian Minister for Mineral Resources Development pursuant to the provisions of the *Roxby Downs (Indenture Ratification) Act 1982*, the Indenture scheduled to that Act and the *Development Act 1993*;
- the South Australian Minister for Urban Development and Planning under the *Development Act 1993*;
- the Northern Territory Transport and Infrastructure Minister to undertake works at the Port of Darwin under the *Darwin Port Corporation Act*.[155]

Consistent with the governments' requirements, the Draft EIS was publicly displayed for 14 weeks (from May 2009 to August 2009), allowing individuals, communities and organisations considerable time to make written submissions to the governments. Copies of the Draft EIS were made available at libraries of some Universities, and at several governmental departments and Municipal Councils. During the public consultation period, six public meetings were held to allow public discussion of the proposed project with representatives of both BHP Billiton and the South Australian government. Below are the key steps in the assessment process following BHP Billiton's release of its Draft EIS:

- The public consultation period for the Draft EIS ended on 7 August 2009, at which all submissions were circulated to South Australian, Commonwealth and Northern Territory governments and BHP Billiton for consideration;

151 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Executive Summary.

152 The consultation event included 900 people from Roxby Downs; 1,400 people from Upper Spencer Gulf; 3,200 people from South Australian metropolitan; 800 people from other South Australian communities; 200 marine stakeholders, 100 pastoralists, and 1,700 students.

153 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Information Sheet.

154 A copy of the EIS can be downloaded from http://www.bhpbilliton.com/bb/odxEis.jsp

155 *Olympic Dam Expansion Draft Environmental Impact Statement 2009. Chapter 6 Legislative Framework.*

- BHP Billiton will respond to issues raised in the submissions through a Supplementary EIS in early to mid 2010;
- Upon receiving the Supplementary EIS, the governments will each prepare an Assessment Report.
- The relevant South Australian, Commonwealth and Northern Territory Ministers will then consider the Assessment Report, after which they will decide on whether or not to approve the proposed expansion (currently anticipated in July 2010). The Ministers may grant approvals subject to various conditions.
- The decision will be published in the relevant Government Gazettes, on the website 'www.olympicdameis.sa.gov.au' and will be released through relevant media outlets;
- Appeal rights are not available for the community or BHP Billiton.[156]

There has been debate concerning the actual effectiveness of an EIS. Since proponents of a project are the ones who prepare the EIS, it is extremely rare for an EIS to proclaim that the project will result in repercussions too adverse and that the project should not ensue. It is frequently disputed that the environment impact process is imperfect as the party preparing the environmental study has an interest in the proposal being approved. The preparation of an EIS forms part of the internal decision-making process undertaken by the proponent of the project, and it is possible for the proponent to make alterations to the project as a result of investigations or discoveries arising from the process in order to legitimise the project before seeking approval from governmental authority.

Nevertheless, an EIS plays an essential role in notifying the public decision-making process by presenting information to consent authorities, approval agencies, and members of the public wishing to make submissions with regard to a project. The EIS should not be considered the only assessment of a project, as it is also the duty of the consent authority to make critical evaluations of the EIS, although this can be an extensive task. It is unlikely that a consent authority will perform more than a 'desktop review' of an EIS as it is rare for a consent authority to assign its consultants to confirm surveys or data laid out in the EIS.[157]

5.5.4 Ethical Guidelines

BHP Billiton is required to abide by all relevant legislations in South Australia, the Northern Territory and the Commonwealth in order to ensure that the Olympic Dam operation is carried out in a safe and environmentally acceptable manner. The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the main Federal Government legislation under which the expansion will be assessed. This Act administers national environmental assessment and approvals and protects Australian biodiversity. It prescribes that activities likely to have substantial impact on a matter of national environmental significance, or constituting nuclear actions, must undergo a comprehensive assessment and approval process. On 15 September 2005, the South Australian Minister for Mineral Resources Development declared that an EIS for the proposed expansion should be prepared in accordance with the Federal Government's EPBC Act process.

Section 46B of the South Australian Development Act 1993 establishes the EIS process, and entails a review of the project's consistency with governmental policies and legislation. The two main Acts in South Australia relevant to attaining an approval for the expansion of the Olympic Dam mine are the *Roxby Downs (Indenture Ratification) Act 1982*, and the *Development Act 1993*. Numerous other South Australian Acts apply to the project, including:

- Aboriginal Heritage Act 1979;
- Aboriginal Heritage Act 1988;
- Climate Change and Greenhouse Emissions Reduction Act 2007;
- Environment Protection Act 1993;
- National Parks and Wildlife Act 1972;

156 Government of South Australia: Department of Planning and Local Government. 2009. *Olympic Dam Expansion*. http://www.planning.sa.gov.au/go/olympic-dam/2009

157 David Farrier and Paul Stein (ed). *The Environmental Law Handbook*, p. 241.

- Native Title (South Australia) Act 1994;
- Natural Resource Management Act 2004;
- Petroleum Act 2000;
- Public and Environmental Health Act 1987;
- Radiation Protection and Control Act 1982.

The principles of ecologically sustainable development are contained in Commonwealth, State and Territory legislation, entailing the consideration of ecologically sustainable development in the environmental assessment stage of a project. The principles are embedded in several of the above Acts, namely the *Climate Change and Greenhouse Emissions Reduction Act 2007*, the *Environment Protection Act 1993*, and the *Natural Resource Management Act 2004*. For instance, the objective of the *Climate Change and Greenhouse Emissions Reduction Act 2007* is to assist in achieving ecologically sustainable development in the State by addressing issues associated with climate change, in particular through the reduction of greenhouse gas emissions and an increase in renewable energy; whereas the objective of the *Environment Protection Act 1993* is to protect the environment, promote the principles of ecologically sustainable development and ensure that all reasonable and practicable measures are taken to protect, restore and enhance the quality of the environment, having regard to the principles of ecologically sustainable development.[158]

There are five important concepts integrated within the principles of ecologically sustainable development. They are:

- "Long-term and short-term economic, environmental, social and equitable considerations – namely that the principles of ecologically sustainable development require the effective integration of environmental considerations and resources in decision-making which may include the consideration of ecosystems; people; communities; natural and physical resources; the qualities and characteristics of locations, places and areas; and the social, economic and cultural aspects of these things in the present and future.
- The precautionary principle – which reinforces the need to take risk and uncertainty into account. The precautionary principle is the principle that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage. The function of the precautionary principle is to shift the burden of proof to require a proponent to address the threat of serious or irreversible damage, notwithstanding that there is scientific uncertainty about the threat. In the application of the precautionary principle, the measures adopted should be proportionate to the potential threat.
- Inter-generational equity – being the concept that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
- Conservation of biological diversity and ecological integrity – where biological diversity, or 'biodiversity', is considered to be the number, relative abundance, and genetic diversity of organisms from all habitats (including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are a part) and includes diversity within species and between species, as well as diversity of ecosystems and may be assessed in terms of ecological health;
- Improved valuation, pricing and incentive mechanisms – such that if the real value of natural resources is incorporated into the cost of using those resources, it is more likely that these resources will be used in a sustainable manner, adequately managed and not wasted."[159]

According to BHP Billiton, the principles of ecologically sustainable development have been used to guide several technical studies instigated for the Draft EIS, as well as having been incorporated into the decision-making process during the examination of project options.

158 *Olympic Dam Expansion Draft Environmental Impact Statement 2009, Chapter 6 Legislative Framework.*

159 *Olympic Dam Expansion Draft Environmental Impact Statement 2009, Chapter 25 Cumulative Effects.*

5.5.5 Concerns regarding Proposed Expansion of the Olympic Dam Mine

5.5.5.1 Vegetation and Fauna

The expansion of the Olympic Dam mine would require the clearing of approximately 17,000 hectares of native vegetation and associated fauna habitat, which has already been disturbed to some extent. 21 types of vegetation would be affected, all of which are considerably prevalent in the region. On the whole, the loss of vegetation would amount to 1.3 per cent, and the residual impact on these plant species have been determined to be insignificant.

BHP Billiton has indicated that it will avoid identified locations of threatened plant species where feasible, and will also not disturb any endangered communities protected under the *Environment Protection and Biodiversity Conservation Act 1999*. In addition, there will be 18 species of threatened animals that may be affected by the expansion. BHP Billiton claims that it commits to set aside 128,278 ha of land for conservation purposes, which is almost eight times more than the land disturbance required to construct the expansion of the project.

The environment at Olympic Dam is managed according to the operation's AS/NZS ISO 14001:2004 certified management system. This system ensures that environmental commitments, license conditions and contractual agreements are met. BHP Billiton states that an expansion of the Olympic Dam would require a revision of environmental management programs, to take into further account the use of natural resources, the storage, transport and handling of hazardous material, the operation of industrial systems, the generation of industrial waste and the employment and accommodation of people.[160]

5.5.5.2 Water

Although South Australia is known to be the driest state in Australia, the Olympic Dam at present uses an average of 31 to 33 million litres of groundwater per day, amounting to about 11.3 billion litres per year. The water is drawn from the Great Artesian Basin, which is situated approximately 200 km to the north of the Olympic Dam and which covers 22 per cent of the Australian continent (or 1711,000 km^2). The Great Artesian Basin is a large body of water that is immersed under the surface of central Australia, and bears traditional indigenous significance. It provides water for pastoral properties, wildlife habitats and supports up to 600 individual springs including the delicate Mound Springs in South Australia's arid north.

Excessive withdrawal of water from the Great Artesian Basin for pastoral purposes over the past century, together with recent extensive mining projects such as Olympic Dam have resulted in significant repercussions on the environmental sustainability of Mound Springs. The over-extraction of water from the Great Artesian Basin will cause a significant reduction in groundwater pressure and thus prevent natural water flow to Mound Springs.

A recommendation from the Threatened Species Scientific Committee in 2001 found that the ongoing extraction of water from the Great Artesian Basin is likely to play a continued role in the deterioration of Mound Springs. Subsequently, Mound Springs were listed as endangered ecological communities under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.[161] Due to the seclusion of Mound Springs in the desert over many thousand years, the region contains numerous rare species that have been subject to genetic alterations. As a result, numerous types of unique flora and fauna have developed across the springs. Species such as the Salt Pipewort (button grass) and the Dalhousie Goby fish are susceptible to extinction if the springs are not cautiously managed. Furthermore, these springs create wetlands and small creeks that are especially imperative for wildlife during droughts.

The springs constituted an important resource for the Aboriginal inhabitants of the region for many thousands of years, evidenced by the large quantity of stone chips and other Aboriginal tools discovered

160 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Executive Summary.

161 New South Wales Government: Department of Environment. Climate Change and Water, *Artesian Springs Ecological Community-Endangered Ecological Community Listing*. http://www.environment.nsw.gov.au/determinations/ArtesianSpringsEcologicalCommunityEndComListing.htm

in the locality of the springs. The Arabunna people, who are the traditional custodians of the area, consider the springs as sacred sites. Accordingly, they feature in much of Aboriginal mythology and history, and are important for many traditional ceremonies.

5.5.5.3 Desalination Plant

The proposed expansion of the Olympic Dam mine may require an increase of 125 million litres of water per day. This additional water is mainly required for dust suppression in the proposed open cut mine, to create the slurry for the flotation stage, and for pollution control. BHP Billiton is not required by law to pay for its water use under the *Roxby Downs (Indenture Ratification) Act 1982*.

BHP Billiton has proposed that the water increase will be met by the construction of a desalination plant in the Upper Spencer Gulf, which raises a number of concerns for local communities. Firstly, there are concerns regarding the effects of a desalination plant on marine life as its planned location at Point Lowly on the Upper Spencer Gulf could have adverse impacts on fishing and the existence of giant cuttlefish that breed nearby.

Marine ecologist Dr. Toby Bolton, from Flinders University's Lincoln Marine Science Centre, has warned that there is insufficient knowledge as to the cumulative, long-term effects of desalination plants thus they could not at present be considered as the solution to the region's water shortages. Dr. Bolton further stated that the proposed location of a desalination plant on the Upper Spencer Gulf was inappropriate because the Upper Spencer Gulf area has poor tidal exchange and contains mangrove and samphire swamps that provided food for marine organisms such as giant cuttlefish and whiting.[162] A South Australian parliamentary committee, the Environment, Resources and Development Committee, has suggested that a different site be used for the proposed desalination plant as Point Lowly would be unfeasible due to the concern regarding improper dispersal of brine from the plant that might destroy marine life.

Secondly, the proposed desalination plant would require additional energy. BHP Billiton responded that the plant would not require energy until 2015, and that it's energy demand would be met by renewable energy sources. The company has also expressed an intention to construct a cogeneration power station at Olympic Dam to satisfy the electricity demand, which would generate electricity by capturing waste heat from the burning of sulphur in the process of producing sulphuric acid.

5.5.5.4 Increased Greenhouse Gas Emissions

The amount of energy used by the Olympic Dam currently makes up about 10 per cent of South Australia's total energy consumption. The proposed expansion will increase the amount of energy consumption by the mine, which would result in an increase amount of greenhouse gas emissions. The most substantial emissions from both the current and proposed Olympic Dam operation are carbon dioxide, arising from the indirect combustion of hydrocarbons to produce electricity, and the direct combustion of hydrocarbons in vehicles and furnaces.

BHP Billiton has acknowledged the need to address greenhouse gas emissions in its Climate Change Position in that it aims to reduce greenhouse gas emissions to an amount equivalent to a 60 per cent diminution of 1990 emission by the year 2050. However, the Australian Conservation Foundation, a community-based environmental organisation, has stated that BHP Billiton has not produced "*any timeline commitment for any proposed element to meet a 60 per cent reduction, other than by 2050…BHP assumes the right to pollute at unacceptable levels for decades…the mine could then close without any of this claimed abatement having been undertaken.*"[163]

162 The Age. *Scientists Denounce Location of Proposed Desalination Plant for Olympic Dam Mine as Inappropriate (South Australia).* http://www.wise-uranium.org/umopauod.html

163 Australian Journal of Mining. *Expansion Could Raise Emissions*, http://www.theajmonline.com.au/mining_news/news/2009/august/august-13th-09/other-top-stories/olympic-dam-expansion-could-blow-out-sa2019s-emissions-1

According to BHP Billiton, the expansion's peak greenhouse gas emissions of an estimated 4.7 million tonnes per annum in 2020 would add 9.8 per cent to South Australia's predicted annual greenhouse gas emissions, and 0.74 per cent to the predicted national annual greenhouse gas emissions. The Australian Conservation Foundation has disputed this, contending that BHP Billiton's greenhouse gas emissions will amount to an increase of at least 12.4 per cent to South Australia's predicted annual greenhouse gas emissions by 2020, casting uncertainty on South Australia's Premier Mike Rann's goal to meet the international Kyoto target of reducing greenhouse gas emissions to 108 per cent of 1990 levels in the first commitment period (2008-2012), as well as the South Australian Government's plan based on the *Climate Change and Greenhouse Emissions Reductions Act 2007* to reduce greenhouse emission levels by 60 percent (to 40 per cent of 1990 levels) by 2050.[164]

Current operations at Olympic Dam produce 900,000 tonnes per annum (tpa) of carbon dioxide equivalents; this will inevitably increase with an expansion. BHP Billiton states that it commits to reducing greenhouse gas emissions through the building of the cogeneration plant and the use of renewable energy for the desalination plant. Furthermore, the expansion of the Olympic Dam will result in an increased production of uranium oxide, specifically, up to 19,000 tpa, which will be used by customer countries to produce approximately 756,000 Gigawatt hours of electricity per year. BHP Billiton asserts that if this amount of electricity derived from uranium oxide were to substitute the amount of electricity derived from typical fuel mixes from countries around the world, greenhouse gas emissions would be reduced by an amount equivalent to Australia's carbon emissions in 2006 (575 million tonnes of carbon dioxide equivalents). In this sense, BHP Billiton claims that it plays a role in assisting Australia reduce the production of greenhouse gas emissions.[165] Nevertheless, Dr. Gavin Mudd, an environmental engineer from Monash University, has alleged that BHP Billiton's justification is questionable. Firstly, BHP Billiton has not included the end uses of nuclear energy exports into Australia's greenhouse emissions, because if they were, BHP Billiton would also be required to account for its significant fossil fuel exports. Secondly, BHP Billiton's argument is based on the notion hat the only alternative to uranium exports is the construction of fossil fuel power plants.

5.5.5.5 Radioactive Tailings

The Olympic Dam would be expanded to a main hole 3 km wide, and 1.5 km deep. The waste, or tailings, from uranium mining contains radioactive substances with a half-life of thousands of years. They are stored underground on top of a plastic liner to prevent leakage, covered with a layer of earth and water. Despite the precautions taken to prevent leakage of tailings, there have been several reported spillages at the Olympic Dam. In 1994, it was revealed that three billion litres of tailings had been leaking for over two years. Below is a list of some reported incidences of tailings spillage:

- 20 August 2003: Tailings solids and liquor containing approximately 0.03 per cent uranium flowed into a bunded tailings pipeline corridor, caused by failure to seal an isolation valve susbsequent to routine maintenance;
- 8 February 2004: Tailings leaked under the pressure as a result of a small tear in a tailings delivery line;
- 21 May 2004: A spill of tailings containing 0.014 per cent uranium occurred when a weld failed in a high density polythene pipe;
- 01 January 2008: A flexible section of pipe failed causing 30 cubic metres of tailings material to be discharged;
- 18 February 2008: Approximately 270 cubic metres of tailings escaped into the tailings pipeline corridor from a pipe failure.[166]

In December 2004, more than 100 birds that came in contact with acidic tailings liquor were found dead at the mine's tailing dams over a period of four days. More specifically, there have been approximately 26

164 Issues at Operating Uranium Mines and Mills. *Olympic Dam, Australia*. www.wise-uranium.org/umopauod.html

165 *Olympic Dam Expansion Draft Environmental Impact Statement 2009. Chapter 25. Cumulative Effects.*

166 This is an incomplete list. The complete list can be found at www.minerals.pir.sa.gov.au. *Spill Incident Summary as Reported by BHP Billiton*.

reported incidences of tailings seepage amounting to license violations from 2001 to 2009. In response, BHP Billiton asserted that the seepage did not result in any significant adverse environmental impact or danger to public safety, and that it has created evaporation ponds as a corrective measure. Also, it claims to have carried out measures to curtail fauna contact with the tailings system.

Olympic Dam further claims that throughout its 20 years of operation, it has implemented effective methods to protect employees, contractors and members of the public from radiation, and these methods will persist with the expansion. BHP Billiton's Draft Environmental Impact Statement indicates that members of the public residing at the Roxby Downs area would be expected to receive radiation levels of approximately 0.17 millisieverts (mSv – one-thousandth of a sievert) per year above background levels, which is equivalent to about one-sixth the international limit for public doses.[167]

Greenleft, a campaigning paper, alleges that workers at Oympic Dam receive radiation measuring 10 to 11 millisieverts per year. In addition, Mark Parnell (Greens member of the Legislative Council in South Australia) alleges that the documents he obtained in relation to radiation monitoring raised concerns as to the frequency and precision of radiation testing at the Olympic Dam mine because reports provided by BHP Billiton to the Environment Protection Authority (EPA) contained insufficient information with regard to radiation exposure for workers at the areas of uranium and copper mine where the risk is highest.[168]

Audit reviews obtained by *The Australian* under Freedom of Information laws recommended government regulators to bring about changes to Olympic Dam's deposit of tailings, asserting that the Olympic Dam uranium mine requires considerable improvement to its management of radioactive waste. The reviews also disapproved of the lack of a precise formula to ascertain the rate of evaporation of tailings and the amount of tailings that leak into the ground.[169]

5.5.5.6 Population Increase

The Roxby Downs township, where most of Olympic Dam's operational workforce resides, has a population of 4,500 and is situated 14 km South of the mine. 25 km to the East of Roxby Downs is Andamooka, an opal-mining town with settlement dating back to the 1930s with a population of 500.

The expansion of Olympic Dam will lead to a significant increase in population, in particular an increase of people involved in constructing and operating the expansion. This will result in an elevated demand for services, and also bring about increased confrontation to law and order. BHP Billiton claims to carry out continuous consultation practices and engagement with affected local communities in order to curtail disturbances to their lifestyles.

To address the population increase, BHP Billiton has proposed the development of a new accommodation named Hiltaba Village for construction workers. The Hiltaba Village is to be built midway between Roxby Downs and Andamooka. BHP Billiton states that in making this choice, it has taken into account the preferences of the residents of Roxby Downs and Andamooka as residents prefer that the construction workforce be accommodated outside both towns. By building Hiltaba Village at the proposed location, the impacts of dust and noise on Hiltaba Village's residents would be reduced, and disturbance to Aboriginal heritage sites would be minimised.[170]

5.5.5.7 Global Impacts

An expansion of the Olympic Dam will inevitably result in an increased production of greenhouse emissions, which will further contribute to climate change on a global scale. Another international concern with regard the expansion involves the amplified risks of nuclear weapons proliferation associated with increased levels of uranium export.

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167 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Executive Summary.

168 ABC News. 2008. Radiation Monitoring of Olympic Dam Mine Workers Has Been Lessened, Greens Says. http://www.abc.net.au/news/stories/2008/06/19/2279266.htm (Accessed 19 June 2008).

169 Issues at Operating Uranium Mines and Mills. *Olympic Dam, Australia*. www.wise-uranium.org/umopauod.html

170 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Executive Summary.

Friends of the Earth Australia, a community-based activist organization working for an environmentally sustainable future, views the increased capacity for nuclear weapon production as disconcerting given the limitations of the international nuclear safeguards system. Director General of the International Atomic Energy Agency (IAEA), Dr Mohamed El Baradei, has drawn attention to the limitations of the IAEA in stating that IAEA's basic rights of inspection are "fairly limited", that the safeguards system suffers from "vulnerabilities" and "clearly needs reinforcement".[171]

BHP Billiton has plans to supply China and its growing energy market with an additional 10,500 tonnes of uranium production per year. The Australian Conservation Foundation believes that BHP Billiton's sale of uranium to China means that Australia will not be able to control or monitor China's use of the uranium. In addition, Assoc. Prof. Tilman Ruff. indicated in a 2007 paper that out of 44 proliferation-sensitive nuclear facilities in China, only ten were qualified for IAEA safeguards, only three had been inspected, and only one had undergone complete IAEA safeguard measures.[172]

On the other hand, BHP Billiton states that Australia has a bilateral safeguards treaty with China. Multi-lateral and bi-lateral safeguards agreements ascertain that the uranium usage will be restricted to the civil nuclear cycle, and that customer countries would manage the uranium in a secure and environmentally acceptable manner.

5.5.6 Indenture Agreement

5.5.6.1 Roxby Downs (Indenture Ratification) Act 1982

Operations at the Olympic Dam are governed by the *Roxby Downs (Indenture Ratification) Act 1982* ('Indenture Act'). The Indenture Act provides statutory authority for an agreement (Indenture) between BHP Billiton and South Australia and lays out the legal framework for Olympic Dam operations. It establishes the duties and roles of BHP Billiton and South Australian Government, and was enacted to accelerate and protect the establishment of the Olympic Dam copper and uranium mine in the 1980s, which was at the time owned by WMC Resources Ltd. BHP Billiton took over WMC Resources Ltd in 2005, and the benefits of the Indenture Act were transferred to BHP Billiton. In compliance with the Indenture Act, BHP Billiton submits an annual report on its environmental performance to the South Australian Government. This report is referred to as the Environment Management and Monitoring Report, and is publicly available.

The Indenture Act gives rise to some contentious issues as it exempts BHP Billiton from *some* provisions of the following South Australian legislations:

- Aboriginal Heritage Act 1988;
- Environment Protection Act 1993;
- Freedom of Information Act 1991;
- Natural Resources Management Act 2004 (including the Water Resources Act 1997);
- Mining Act 1971. [173]

The nature of legal privileges conferred upon BHP Billiton is expressed by Section 7 of the Indenture Act, which stipulates that: "*The law of the State is so far modified as is necessary to give full effect to the Indenture and the provisions of any law of the State shall accordingly be construed subject to the modifications that take effects under this Act...In the case of any inconsistency between the provisions of any Act or law and of the Indenture, the provisions of the Indenture shall prevail.*" In other words, Acts of state parliament are secondary to the provisions of the Indenture Act.

171 International Atomic Energy Agency. *Statements of the Director General.* www.iae.org/Publications/Magazines/Bulletin/Bull462/a_race_3.html

172 Stated by David Noonan, member of the Australian Conservation Foundation (ACF).

173 *Roxby Downs (Indenture Ratification) Act 1982*. Section 7(2)(a).

5.5.6.2 Controversy regarding Freedom of Information

The South Australian government signed the 'Citizens Right to Information Charter' in October 2002, indicating a commitment to achieving the highest standards of openness and accountability. It ensures citizen access to documents and records held by the government of South Australia. The Charter emphasizes the importance of the South Australian *Freedom of Information Act* 1991, which gives citizens the right to access legally available documents in the possession of State and Local Government and South Australian Universities, and to amend documents that relate to citizens which are incorrect, incomplete, out of date or misleading.[174]

Section 9 of the *Freedom of Information Act* specifies that it is the duty of a responsible Minister and an agency to publish up to date information statements, which must contain:

- a description of the structure and functions of the agency;
- a description of the ways in which the functions of the agency affect members of the public;
- a description of any arrangements that exist to enable members of the public to participate in the formulation of the agency's policy and the exercise of the agency's functions;
- a description of the various kinds of documents that are usually held by the agency; and
- a description of the procedures of the agency in relation to the giving of access to the agency's documents.

BHP Billiton constitutes an 'agency' as it is an incorporated body under section 4 of the *Freedom of Information Act*. Confidentiality clause 35 of the Indenture Act specifies that: "*No party shall make public any information provided by another party hereto pursuant to this Indenture without first obtaining the consent of the relevant party and shall have due regard to any interests obligations or commitments of that relevant party in relation thereto.*" In other words, BHP Billiton has discretion to refuse the public release of information with regard its activities at Olympic Dam, as well as negotiations the company undertakes with the government or with other parties. Clause 35 of the Indenture Act contradicts the South Australian government's policy of achieving high standards of openness and accountability.

The Olympic Dam mine expends more resources than any other ventures in South Australia, and has the potential to destroy South Australia's natural heritage as well as the health of its workers and residents of the area. Citizens have a right to be informed about the nature of the activities undertaken by BHP Billiton, particularly as uranium mines are frequently perceived as high-risk operations.

Under the Indenture Act, environmental standards of the Olympic Dam mine are administered by Primary Industries and Resources South Australia (PIRSA) – an agency of the South Australian government dedicated to the economic progress of the state and the sustainable use of South Australia's food, fibre and minerals industries. Friends of the Earth alleges that PIRSA is a governmental body committed to promote mining, thus PIRSA's administration of environmental standards at the Olympic Dam amounts to a conflict of interest.[175] Mining operations undertaken at the Olympic Dam have the ability to damage significant portions of the environment, and should be subjected to environmental safeguards that legally apply to every other corporation in Australia.

5.5.6.3 BHP Billiton Has No Plans to Relinquish Exemptions

At BHP Billiton's Annual General Meeting held on 28 November 2009, its CEO Marius Kloppers expressed no intention to relinquish the legal exemptions laid out by the Indenture Act. This is despite the exemptions being incoherent with Mike Rann's South Australian Labor government policy of applying the 'strictest environmental standards' to uranium mining.[176] Dr. Gavin Mudd, an environmental engineer from Monash University asserts, "*until the Indenture Act is revoked entirely there can be no truly independent, external environmental assessment of the impacts of Olympic Dam*". Notably, the Indenture Act is expected to be revised in the 2010 as part of the proposed mine expansion.

174 *Citizens' Rights to Information in South Australia*. www.archives.sa.gov.au/files/foi_charterbrochure.pdf

175 Friends of the Earth Australia. *Above the law? Roxby Downs and BHP Billiton's Legal Privileges*, www.foe.org.au/anti-nuclear/issues/mining/roxby-downs-indenure-act

176 *Ibid.*

It has been more than two decades since the enactment of the Indenture Act, and environmental standards have undergone advancement. The Olympic Dam mine, as one of the world's largest mines, no longer requires a 'free kick' from the South Australian government and the privileges conferred upon BHP Billiton are no longer appropriate. There is a lack of justification for BHP Billiton to be granted special privileges that presents them with a potential commercial gain over other developers.

5.5.7 Governmental and Public Response to Environmental Impact Statement (EIS)

In response to BHP Billiton's EIS, the South Australian Government submitted its key concerns, which include the need for BHP Billiton to further scrutinise water, waste and transport issues, and also radiation and air pollution impacts on the Roxby Downs community. Other governmental concerns involved BHP Billiton's proposed desalination plant and the inadequacy of surveys in relation to marine life in the Upper Spencer Gulf. The desalination plant was the most prominent issue raised by the public in their responses to the EIS, with 95 per cent of 4,189 submissions concerned with the plant. The South Australian Government has requested more information with regard to Olympic Dam's proposed radioactive tailing storage facility and a deeper analysis of the possible long-term impact on groundwater aquifers in the Great Artesian Basin. It also called for details regarding BHP Billiton's plan to supply up to 40 per cent of its electricity from renewable sources. BHP Billiton has proposed to address all submissions in its supplementary EIS, which is expected to be released mid of 2010.[177]

5.5.8 Impact of Uranium Mining on Indigenous Australians

5.5.8.1 Brief Aboriginal History

Sixty to seventy per cent of the world's minerals, oil and gas are found in the territories of indigenous peoples. Despite recent significant progress in the endorsement and protection of the human rights of indigenous peoples, industries operating mineral, oil and gas extraction often impose unequal impacts upon indigenous communities. Uranium mining in Australia has proven to be a controversial matter when mining occurs on traditional land that holds great significance for the indigenous communities of Australia. The indigenous peoples of Australia, consisting of the Aboriginal and Torres Strait Islander peoples, comprise about 2.3 per cent of the population in Australia. When British settlers arrived in Australia in 1788, up to one million Aboriginal peoples resided over all areas of the country, whereas Torres Strait Islanders resided on islands between Australia and Papua New Guinea, in what is now known as the Torres Strait. Together they comprised of 300 clans and spoke 250 languages and 700 dialects. The arrival of British settlers resulted in dispossession of land and illnesses and deaths from introduced diseases, thus disrupting the traditional lifestyles and practices of the indigenous communities.

After the Federation of Australia in 1901, the new Commonwealth parliament attempted to secure the 'White Australia' policy. The 'White Australia' policy originated in the 1850s, and was partly a result of white miners' antipathy toward assiduous Chinese gold diggers in Victoria and New South Wales.[178] This was followed by the resentment fostered by white workers and trade unions toward indentured labourers from the South Sea Islands of the Pacific, and later toward non-white people who worked for lower wages.[179] Subsequently, the Aboriginal people who made up the largest non-white group were perceived as a threat to the white Australia ideal. The 'White Australia' policy entailed that Aborigines who were not of 'pure blood' were to be assimilated into the white society in order to gradually eliminate the Aboriginal population, giving rise to the 'Stolen Generation', a period between 1910 and 1970

177 Australian Mining, *SA Government Submits Olympic Dam Concerns*. http://www.miningaustralia.com.au/Article/SA-Government-submits-Olympic-Dam-concerns/495401.aspx

178 The 'White Australia' policy dominated Australia's approach to immigration until 1973 when it was abolished by the Labor government. Australia's present migration policy permits people from any country to apply to migrate to Australia, regardless of their ethnicity, culture, religion or language, provided that they meet the criteria established by law, refer to www.immi.gov.au/media/fact-sheets/08abolition.htm

179 Australian Government. Department of Immigration and Citizenship. *Australian Immigration Fact Sheet 8. Abolition of the 'White Australia' Policy*. www.immi.gov.au.media/fact-sheets/08abolition.htm

whereby up to 100,000 Aboriginal children (exact figure contested) were taken forcibly or under duress from their families by police or welfare officers, and placed in churches or state institutions, or were fostered or adopted by white families. The children were distanced from their Aboriginal culture, and were unable to practise their traditions and ceremonies. Many were subjected to poor living conditions, and suffered from physical and sexual abuse.[180]

5.5.8.2 Past Nuclear Effects on Aborigines

The phobia of Aboriginal communities over nuclear energy is comprehensible once the history of nuclear effects on them are realised. In the 1950s, British nuclear tests were conducted on Australian soil, specifically, 7 major tests were carried out at Maralinga in South Australia between 1955 and 1963, resulting in significant dispersal of radioactive contamination to the local environment. Indigenous groups in the surrounding areas remembered a 'black mist', or what the Yankuntjatjara refer to as the 'puyu', entering their camps after the tests, which was later followed by extensive illnesses in the form of skin rashes, diarrhoea, vomiting and fever. Indigenous communities across the Western Desert were exposed to high levels of radiation, leading to deaths and sicknesses such as leukaemia and other cancers, birth defects, thyroid problems, blindness, infertility and growth deficiencies. Indigenous groups consisting of the Maralinga, Pitjantjatjara and Kokatha were dispossessed from their land, and compelled to relocate to governmental or mission-controlled communes.

Many Australians were dissatisfied by the manner in which the British authorities carried out the tests, in that the authorities disregarded the environmental consequences and failed to adequately protect the Aboriginal people. In 1993, Australia accepted $A45 million from the British Government for the cost of decontamination to their traditional lands. In 1994, the displaced Aboriginal people, together with the Federal Government agreed on a compensation settlement of $A13.5 million which was to be expended on health, employment and infrastructural projects. Nevertheless, the Australian Government released a report in 2000 indicating that the traditional lands could not be fully decontaminated. Approximately 120 km^2 of land remained contaminated and was not fit for habitation. Eventually, the decontamination operation was declared to be a failure in 2003.[181]

In February 2008, Prime Minister Kevin Rudd issued a formal apology to the indigenous people, and expressed regret for the 200 years of affliction and racial injustice they suffered in the hands of successive governments. Nevertheless, indigenous access to land ownership remains a problem, and acts as a hindrance to complete reconciliation between White and Aboriginal Australia. Presently, Aboriginal communities suffer from a myriad of problems consisting of unemployment, imprisonment, domestic violence, low life expectancy, high rates of ill health, lack of education, substance abuse, malnutrition, discrimination, poor housing conditions and marginal economic status. They continue to be the most disadvantaged group within the Australian community.

5.5.8.3 Importance of Land

Australia's indigenous culture is one of the oldest existing communities in the world, going back to at least 40,000 to 60,000 years. Their spiritual cosmology, referred to as 'Dreamtime', strongly binds indigenous communities to their ancestor's land. Land in this context refers to a whole environment that sustains and is sustained by people and culture. The Aborigines believe that ancestor spirits came to earth as humans and created animals, plants and rocks, and once these ancestor spirits created the world they transformed into trees, rocks, watering holes and other similar objects of nature. These objects of nature constitute the sacred sites of Aboriginal culture.[182]

180 European Network for Indigenous Australian Rights. *The Stolen Generations.* www.eniar.org/stolengenerations.html

181 Australian Government. National Archives of Australia. *Fact Sheet 129 - British Nuclear Tests at Maralinga*. http://www.naa.gov.au

182 Australian Government. Culture Portal, *Australian Indigenous Cultural Heritage*. www.cultureandrecreation.gov.au/articles/indigenous

Aborigines view land as non-transferable, and refer to their land as their "country". Each Aboriginal group has specific ceremonies, songs and spiritual ties that are connected to a specific "country". In this sense, land is the core of their spirituality. Each Aboriginal group has numerous myths regarding the formation of their land by their ancestral beings, and that the two (land and ancestral beings) are inseparable. Because Aboriginal peoples also believe that they are directly connected to their ancestral beings, they consider that there is a direct relationship between themselves and their land. In effect, Aboriginal groups possess unyielding spiritual and cultural associations to their "country", giving rise to collective custodianship for traditional land.

5.5.8.4 From 'Terra Nullius' to Recognition of Native Title

In 1788, the British claimed sovereignty over Australia and established a colony. The British courts applied the doctrine of terra nullius to Australia in 1889, ascertaining that it was 'unoccupied' territory, and Australian courts followed. Terra nullius refers to land belonging to no one, and within this context it meant that Australia was a "*wildnerness, neither owned nor affected by humans, and the people were mere incidentals on the landscape*."[183] The doctrine of terra nullius rendered the common law doctrine of native title inoperative under Australian law. Native title recognises the rights of indigenous Australians to land and waters in accordance with their traditional laws and customs, which include the right to live on the area concerned, the right to care for the natural environment, the right to perform ceremonies and rituals on the area, the right to hunt, fish and gather food or traditional resources like water, wood and ochre, as well as the right to teach traditional law and customs stories, art song and dance on the area.

In 1992, the High Court overruled the doctrine of terra nullius in the landmark judgment of *Mabo v Queensland (No 2)*, and held that native title was to be recognised.[184] *Mabo v Queensland (No 2)* recognised that indigenous connections with the land existed when Europeans first settled on Australia, and that these indigenous connections with land were equivalent to a valid expression of land ownership. The recognition of native title not only acknowledges that the land was owned, but it also acknowledged the existence of the indigenous communities. Native title rights held by indigenous communities are contingent upon their traditional laws and customs, as well as upon interests held by others in the area concerned.[185] The decision recognised for the first time in Australia that indigenous Australians continue to be distinctively associated with the land, resulting in the Australian Parliament enacting the *Native Title Act 1993*, which conferred upon the indigenous people the right to claim title to their traditional lands. Section 23 of the *Native Title Act* prescribes:

"(1) Native Title Common law rights and interests – The expression native title or native title rights and interests means the communal, group or individual rights and interests of Aboriginal people or Torres Strait Islanders in relation to land or waters, where:

(a) the rights and interests are possessed under the traditional laws acknowledged, and the traditional customs observed, by the Aboriginal peoples or Torres Strait Islanders;

(b) the Aboriginal peoples or Torres Strait Islanders, by those laws and customs, have a connection with the land or waters; and

(c) the rights and interests are recognised by the common law of Australia."

The *Native Title Act 1993* confers upon Indigenous Australians who hold native title interests the right to be consulted, and in certain situations, to participate in decisions with regard to projects proposed to be carried out on the land.

The indigenous peoples hold significant interests in both terrestrial and marine environments of Australia. In the Northern Territory, approximately 41 per cent of land is collectively owned by indigenous

183 Bennett. *Indigenous People and Their Communities.*

184 (No. 2) (1992) 175 CLR 1.

185 Australian Government. Department of Foreign Affairs and Trade, About Australia: Indigenous Land Rights and Native Title. http://www.dfat.gov.au/facts/indigenous_land_rights.html

people under the *Aboriginal Land Rights (Northern Territory) Act 1976*.[186] Native title rights differ from the statutory land rights granted by the government under the *Aboriginal Land Rights (Northern Territory) Act 1976* in the sense that native title interests are based on laws and customs that existed before the British acquisition of sovereignty. In addition, native title rights exist over land and waters to the extent that they are in coherence with other rights established over the land by law or executive action.[187]

Native title is sometimes perceived as an impediment to mining processes, especially by corporations with mining interests. This is because Aboriginal land connection has the ability to limit or bring about delay to exploration access. Rio Tinto cites the '*under capacity of the crucial native title representative bodies that negotiate access to Aboriginal land*' as a problem with regard to its application for access to Aboriginal land, resulting in difficulty for land councils to present punctual and suitable agreements for Aboriginal clients and resource corporations. Native title representative bodies are statutory organisations set up by the Federal Government to represent Aboriginal groups in hearings related to land claims, as well as to administer commercial access to Aboriginal land. Rio Tinto states that access delays between one and two years per tenement application are common, and that their exploration expenditure would be halved if land access process were more efficient. It is important for the under-resourcing and mismanagement of native title representative bodies to be revised, a duty that belongs to the Federal Government as it bears the main responsibility for ascertaining a transparent and efficient land access process.[188] [189]

5.5.8.5 Importance of the Olympic Dam Mine to Aboriginal Communities

Evidence of historic Aboriginal use of land surrounding the Olympic Dam exists in the form of Aboriginal stone artefacts. The Aboriginal communities who occupied the Olympic Dam region led a nomadic lifestyle. Three Aboriginal groups, namely the Barngarla, Kokatha and Kuyani, have claimed native title interests in the Olympic Dam area in accordance with Commonwealth *Native Title Act 1993*. Another Aboriginal group, the Nukunu, has claimed a native title interest in the southern sections of the linear infrastructure corridor. About 60 km of the proposed 320 km water supply pipeline, and about 40 km of the proposed 270 km electricity transmission line are within the land area under the native title claim by the Nukunu. Four other Aboriginal groups, namely the Dieri, Arabunna, Adnyamathanha and Yandruwandha/Yawarrawarrka, have claimed a native title interest in the region of the proposed gas pipeline corridor options. The Kuyani group do not have a native title claim, however, they are party to the Federal Court proceedings in relation to the Kokatha and Barngarla claims. They claim to hold native title rights with regard to parts of the Olympic Dam region. Most of the land disturbing activities arising from the expansion would take place within areas of concern to the Barngarla, Kokatha and Kuyani.

The Maduwonga group have opposed an expansion to the Olympic Dam, rejecting BHP Billiton's EIS. The group states that the land that will need to be cleared to make way for the mine will deprive the most sacred sites in their family's history of their consecrated nature.[190] The Maduwonga are the bloodline custodians of Roxby Downs, where BHP Billiton's uranium mine is located. Expanding the Olympic Dam mine into an open cut mine would oppose the wishes of the Maduwonga ancestors.

BHP Billiton has claimed to receive signatures from the Kokatha people signifying an approval of the Olympic Dam expansion, and that on 14 December 2008, a meeting was held with Kokatha participants allegedly agreeing to accept payment for the use of Kokatha land. However, Kokatha Elders have denied their signatures to BHP Billiton for both an open cut and an expansion. Isabel Dingman, a Maduwonga

186 The *Aboriginal Land Rights (Northern Territory) Act 1976* provided for the transfer of Aboriginal reserves to Land Trusts that hold the title on behalf of traditional owners. The Act also established a process for land claims to be determined by an Aboriginal Land Commissioner. Over the past thirty years, the Aboriginal peoples have been successful in regaining 44 per cent of the land in the Northern Territory.

187 Langton. *Emerging Environmental Issues for Indigenous Peoples in Northern Australia.*

188 Rio Tinto recommends that the Commonwealth Government commit greater resources to native title representative bodies, such as offering management scholarships professional development programs.

189 *Resourcing an Innovative Industry.* Address by Charlie Lenegan – Managing Director Rio Tinto Australia.

190 ABC News. 2009. *Olympic Dam Environmental Impact Statement Rejected*. www.abc.net.au/news/stories/2009/05/04/2559673.htm (Accessed 4 May 2009).

elder and a survivor of atomic testing at Maralinga acting on behalf of the Kokatha claimed that those who signed were not from traditional Kokatha lineage.

Following is a statement made by Isabel Dingaman: "*BHP Billiton is supported by 'traditional owners' who have no genealogies to prove their connections to country. These Jonny-come-latelies just see dollar signs when they sit down with the mining company to sign away our precious Mother Earth. BHP Billiton does not even know who they should be negotiating with because they don't want to recognise that Western Mining Corporation violated the land agreement with our fathers.*" She further stated "*It is well documented that the Kokatha have opposed the open cut and expansion since time immemorial. These were the wishes of our grandfathers and father, who specified, no open cut was to take place. Kokatha will continue to uphold these laws.*"[191]

On 27 November 2008 during BHP Billiton's annual general meeting, a group of approximately 100 protestors led by an Aboriginal elder Kevin Buzzacott gathered outside the venue to urge BHP Billiton to forsake its plans to expand the Olympic Dam mine. The protestors alleged that BHP Billiton would be taking "sacred water", referring to water from the Great Artesian Basin. He stated: "*Do not expand this mine, we don't want an open cut mine. We do not want any more water taken out of the Great Artesian Basin we want that to stop…We don't know if you shareholders understand the impacts of what you're doing to the Arabunna people, the Kokatha people and other tribes around that area. You don't understand what you're doing to the land and the culture.*"

5.5.9 International Standards Concerning Indigenous Rights

To date, Australia has ratified the following major international instruments relevant to indigenous rights:

- International Convention on the Prevention and Punishment of the Crime of Genocide 1948;
- International Convention on the Elimination of All Forms of Racial Discrimination 1965;
- International Covenant on Civil and Political Rights 1966;
- International Covenant on Economic, Social and Cultural Rights 1966;
- ILO 111 Discrimination (Employment and Occupation) Convention 1958;
- United Nations Declaration on the Rights of Indigenous People 2007.

5.5.9.1 International Conference on Indigenous Peoples and Extractive Industries

On 24 March 2009, 85 indigenous peoples' representatives from 37 countries together with experts gathered in Manila for the International Conference on Indigenous Peoples and Extractive Industries. The objective of the conference was to re-enforce the importance of indigenous peoples' rights that were being contravened by extractive industries, which consisted mainly of oil, mineral or gas corporations. The indigenous peoples' representatives expressed concerns about the continued shrinking of their cultural territories due to acts of intrusion by mining corporations, and the apparently relaxed regulations imposed upon these corporations by the states. They called on their respective governments to cease large-scale mining and other extractive activities on their indigenous territories until effectual measures to protect their rights and the environment could be adequately enforced.[192]

The conference succeeded in establishing a global network for indigenous peoples, a channel through which indigenous peoples would be able to raise their concerns. Chair of the UN Permanent Forum on Indigenous Issues, Victoria Tauli-Corpuz, stated indigenous peoples can elevate consciousness about their situation by bringing their cases before national and international courts, raise awareness about damaging cultural and environmental issues through media, and discourse with investors. Ms. Corpuz further stated that states and mining corporations should abide by the standards stipulated in the UN Declaration on the Rights of Indigenous People.

191 Maduwonga Country. *Roxby Custodians Reject BHP Billiton Expansion Plan for Olympic Dam*. http://maduwonga.wordpress.com

192 Mines and Communities. *World Indigenous Peoples Want Global Moratorium on Mining, Other Extractive Projects*. http://www.minesandcommunities.org/article.php?a=9147

5.5.9.2 United Nations Declaration on the Rights of Indigenous Peoples

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was signed by 143 countries on 13 September 2007, with Australia endorsing it on 3 April 2009. Despite the UNDRIP's status as a non-binding text, its adoption by the United Nations General Assembly conferred upon it considerable moral force. The UNDRIP outlines the individual and collective rights of the world's indigenous people to culture, and proscribes discrimination against them. It encourages the indigenous population's complete and effective participation in issues that affect them, as well as their right to stay distinctive and to achieve their own perspectives of economic and social development. The provisions of the UNDRIP include the right to self-determination, right to traditional lands, right to be secure in subsistence and development, right to conservation and protection of environment and productive capacity of lands and the right to free, prior and informed consent. The UNDRIP is the most comprehensive statement of the rights of indigenous peoples to date. The rights contained in the UNDRIP are recognised to be tantamount to "*the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world*".[193]

Article 18 of the UNDRIP states that Indigenous peoples have the *right to participate in decision-making* in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions. Article 26 stipulates that indigenous people have the *right to the lands and resources* which they have traditionally owned, occupied or acquired, and that they have the right to own, use, develop and control these lands and resources. It further stipulates that States shall give legal recognition and protection to these lands and resources with due respect to the customs and traditions of the indigenous peoples concerned.

Free prior informed consultation forms the foundation and context for all consultation processes undertaken with indigenous peoples in relation to project acceptance and mitigation measures. Article 32 of the UNDRIP prescribes the attainment of 'free, prior and informed consent' of the Indigenous peoples before the pursuit of any project affecting their lands or territories and resources, particularly in connection with the development, utilisation or exploitation of mineral or other resources. It further prescribes for the provision of effective mechanisms for just redress for any such activities, and that appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.

According to research undertaken by Experts in Responsible Investment Solutions (EIRIS) and the Centre for Australian Ethical Research (CAER), Australia is one of the four countries that are home countries of companies that are most responsive to indigenous rights issues. The other three countries are New Zealand, Canada and the United States.[194]

5.5.9.3 Consistency with International Standards

5.5.9.3.1 Agreements with Indigenous Peoples

Agreements dictate much of the conduct of relations and engagement between Indigenous and non-Indigenous Australians, and have been used as means to settle disputes, implement government programmes, and to determine common understandings. Australia's position differs from that of Canada, the United States and New Zealand where relations between Indigenous and non-Indigenous people are governed by treaties.[195] This is because Australia considers that treaties can only be made between sovereign nations and that the sovereignty of Australia cannot be divided to allow a treaty

193 Statement issued by James Anya, the Special Rapporteur on the human rights situation and fundamental freedoms of indigenous people; John Henriksen, the Chairperson-Rapportuer of the UN Expert Mechanism on the Rights of Indigenous Peoples; and Victoria Tauli-Corpuz, Chairperson of the UN Permanent Forum on Indigenous Issues.

194 EIRIS. *Indigenous Rights: Risks and Opportunities for Investors.* http://www.eiris.org/files/research%20publications/indigenousrightsjun09.pdf

195 For instance in Canada, Aboriginal peoples of Canada have the right to govern themselves in relation to matters that are internal to their communities such as cultures, traditions and languages, however, this right does not confer sovereignty upon Aboriginal peoples in the external, international law sense. The Government does not recognise the existence of independent Aboriginal nation states. Aboriginal peoples remain subject to Canadian law, although Aboriginal and Canadian laws co-exist.

between peoples within the nation. According to Australia's former Prime Minister John Howard in 2000, Aboriginal Australia did not constitute a sovereign nation, and that a nation "*does not make a treaty with itself*".[196] The Chief Justice of the High Court, Robert French, has discredited this legal argument used by John Howard in his resistance against the accomplishment of a treaty with Indigenous Australians in order to recognise their sovereignty, or legitimate political and legal authority. Justice French stated "*although Aboriginal notions of sovereignty would belong in a different universe of discourse, it would be sovereignty under traditional law and custom" and that a treaty could recognise and acknowledge this cultural reality without undermining Australia's identity as a nation*."[197]

The High Court has acknowledged that "*sovereignty is a fluid concept dependent on context, that (implicitly) Indigenous people were sovereign prior to colonisation, and that Indigenous legal systems continue to operate*".[198] Arguably, sovereignty does not have to be perceived as an indivisible concept.[199] Within a nation, the right to exercise powers that amounts to sovereignty '*may be divided vertically or horizontally*'. In fact, the Australian Constitution shares sovereignty between the Commonwealth and the States. Sovereign powers are divided between the parliament, the executive and the judiciary. It is possible for indigenous jurisdictions to be added to the 'federated mix'. In addition, treaty making is not limited to use between nation states, as the word 'treaty' may refer to a wide range of conceptions including "*a contract, a covenant, an agreement, a settlement, or international arrangement between nation states*".[200]

5.5.9.3.2 Olympic Dam Agreement

Three Aboriginal groups, namely, the Kokatha, Barngarla and Kuyani, entered into the Olympic Dam Agreement with BHP Billiton in January 2008. Prior to the signing of this Agreement, the Aboriginal groups signed the Olympic Dam Negotiation Agreement in August 2005 in order to discuss the implications of the proposed expansion. The provisions of the Olympic Dam Negotiation Agreement encompassed:

- the requirement that an Aboriginal cultural heritage management regime and an Indigenous Land Use Agreement be included in the Olympic Dam Agreement;
- funding to be provided by BHP Billiton for Aboriginal groups to participate effectively in the negotiations, and for representatives of Aboriginal groups to notify their communities and to acquire instructions from the communities according to their decision-making processes;
- the appointment of separate legal representation for each Aboriginal group involved;
- the appointment of representatives of the National Native Title Tribunal to arbitrate and assist discussions.

Since September 2005, there have been regular monthly meetings assisted by the National Native Title Tribunal. In August 2006, the three Aboriginal groups together with BHP Billiton established a Heritage Management Protocol, which has been integrated into the Olympic Dam Agreement. It contains clauses for impact minimisation and mitigation measures, and establishes a regime to protect Aboriginal heritage. For instance, it stipulates that the expansion must be carried out in a manner that is respectful of the interests of the Aboriginal parties, and prescribes mitigation measures in the form of funding ceremonies prior to disturbance of ethnographic sites. The Protocol also establishes a detailed regime to administer the impact of ground disturbing activities on the Aboriginal cultural heritage sites and

196 It is Labor Party's policy to pursue a treaty, however, this is a lower priority as opposed to the goals for improving Aboriginal life expectancy, child mortality and employment.

197 The Sydney Morning Herald. 2009. *Chief Justice backs Aboriginal treaty*. http://www.smh.com.au/national/chief-justice-backs-aboriginal-treaty-20090327-9e79.html (Accessed 28 March 2009).

198 *Treaties, Agreements, Contracts – What's in a name? 2004.* Quoting Sean Brennan, Brenda Gunn, George Williams, Sovereignty and its Relevance to Treaty Making Between Indigenous Peoples and Australia Governments. 26 *Sydney Law Review.* p. 307, 308.

199 There is a distinction between external and internal sovereignty. External sovereignty concerns the relationships between a nation state and with other nation states i.e. who has the power on behalf of the nation to deal with other nation states. Internal sovereignty concerns the relationship between a nation state and its people i.e. how and where power is distributed within territorial boundaries, such as through a federal system or in accordance with a separation of powers between different arms of government (legislative, executive, judicial).

200 *New South Wales v Commonwealth (Seas and Submerged Lands Case)*. (1975) 135 CLR 337. p. 479-480. Quoted in Brennan, Gunn and Williams.

values, and provides funding for a member from each of the Kokatha, Barngarla and Kuyani groups to undergo training in order to be appointed as a field assistant in the undertaking of field surveys. BHP Billiton claims that it continues to carry out separate consultation with other Aboriginal groups (the Nukunu, Arabunna, Dieri and Adnyamathanha) who claim an interest in land that would be affected by the proposed expansion.[201]

According to BHP Billiton, the Olympic Dam Agreement stipulates that BHP Billiton makes payments to a trust for the benefit of Aboriginal communities in northern South Australia, and that these payments will be made for the life of the Olympic Dam mine in order to support programs for education, employment, business development, health and aged care. The Olympic Dam Agreement also provides for the employment of a liaison officer to consult with BHP Billiton and Aboriginal communities about Aboriginal cultural heritage and employment schemes. BHP Billiton is also supportive of the Graham (Polly) Farmer Foundation which assists Aboriginal students in completing their education, and of the Department of Trade and Economic Development's Young Indigenous Entrepreneurs Program to help Aboriginal youths establish individual business. As part of the Olympic Dam Agreement, employees must undergo cross cultural training to ensure awareness of Aboriginal culture and tradition, to promote good affiliations between Aboriginal and non-Aboriginal people.[202]

5.5.9.3.3 Assessing Consistency with International Standards

In the light of international standards concerning indigenous rights, BHP Billiton's policies and programmes appear conducive to the provisions entailing the indigenous right to participate in decision-making, the right to traditionally owned lands and resources, and the right to free, prior informed consultation. BHP Billiton claims that through the company's indigenous programmes, it does more for the Aboriginal communities than is required by the *Aboriginal Heritage Act*, an important piece of legislation enacted to protect Indigenous heritage in South Australia. Conversely, under the Indenture Act, the traditional owners of the land surrounding the Olympic Dam are now obliged to deal with BHP Billiton in order to have their Aboriginal heritage acknowledged. The Indenture Act provides BHP Billiton with the lawful authority to ascertain consultation processes with indigenous communities who are the traditional owners, in the sense that BHP Billiton is able to determine who is consulted and the nature of consultation. BHP Billiton also decides on the standard of protection that Aboriginal heritage sites obtain, and which sites are acknowledged.[203] As stated by Mark Parnell, Greens member of the Legislative Council in South Australia:

> *"The Indenture Act places BHP Billiton in a legal position so that it can choose which Aboriginal groups it acknowledges and consults with, what form that consultation takes, which Aboriginal heritage sites it recognizes, and what degree of protection to offer to those sites."*

As owners of the Olympic Dam mine, BHP Billiton should not be involved in making decisions connected with the recognition and protection of Aboriginal sites, so as to avoid a conflict of interest. Furthermore, in relation to BHP Billiton's claim that it received signatures from the Kokatha community indicating the community's consent to the Olympic Dam expansion, amidst opposing allegations made by the Kokatha people asserting that those who signed were not from traditional Kokatha lineage, depicts an unsatisfactory example of 'free, prior informed consultation'.

5.5.10 Aboriginal Representation

5.5.10.1 Proposed Mining at Jabiluka

In certain circumstances, the indigenous peoples in Australia have succeeded in campaigning against mining activities of extraction industries on indigenous land. One such incident transpired in relation to

201 *Olympic Dam Expansion. Draft Environmental Impact Statement Main Report. Chapter 17 Aboriginal Cultural Heritage.*

202 *Olympic Dam Expansion Draft Environmental Impact Statement 2009*. Information Sheet.

203 Statement made on 6 June 2007, where he spoke about his Greens Private Members bill, for an act to amend the *Roxby Downs (Indenture Ratification) Act 1982*.

a uranium deposit at Jabiluka located on indigenous land. The proposed mining at Jabiluka proved to be controversial for the reason that Jabiluka is situated within the World Heritage listed Kakadu Park in the Northern Territory of Australia. Jabiluka's uranium deposit is owned by Energy Resources of Australia (ERA), a subsidiary of Rio Tinto.

The Jabiluka uranium deposit was discovered in the early 1970s, 20 km North of Ranger. Jabiluka's mine lease area is excluded from the Kakadu National Park, and is connected to the lease of the Ranger mine. The Jabiluka deposit is considered one of the world's larger high-grade uranium deposits with over 130,000 tonnes of uranium oxide.[204]

In 1991, ERA, the operator of the adjacent Ranger mine, took over the Jabiluka lease. Consequently, ERA made plans to initiate the extraction of the Jabiluka deposit. The Australian government approved the Jabiluka uranium mining project on 8 October 1997. On 25 November 1998, the United Nation's World Heritage Bureau revealed that the Jabiluka uranium mine was impinging on the cultural and environmental values of Kakadu National Park. In deciding whether to consider Kakadu National Park as World Heritage 'in danger', the United Nation's World Heritage Committee required for construction of the Jabiluka mine to cease for six months. Eventually, the UNESCO World Heritage Committee determined that Kakadu was not to be listed as 'in danger'.

Meanwhile, the Mirarr people, who are the traditional owners of the land at Jabiluka, together with environment groups, organised a protest involving approximately 3,000 people against the extraction of the Jabiluka deposit. The most significant concern for the Mirarr in relation to mining at Jabiluka was that the mine operation would destroy Kakadu's fragile wetlands and harm the famous Nourlangie Rock, a large display of rock art that carries spiritual importance to the Aboriginal communities, amounting to destruction of their traditional land and the deterioration of their traditional culture.

The Mirarr and other Aboriginal groups have sacred sites within the land covered by the Jabiluka and Ranger leases that are connected with the spiritual and cultural value of the whole Mirarr estate. Mirarr and other Aboriginal groups have traditionally hunted, gathered, held ceremonies, lived and died at places throughout Mirarr land, evidenced by the existence of ancient remains and rock art belonging to Aboriginal communities. Several sacred sites have already been destroyed by the industrial activities of the Ranger mine.

The following is a comment made by Yvonne Margarul, a Mirarr senior traditional owner:

> "*Uranium mining has completely upturned our lives. Uranium mining has also taken our country away from us and destroyed it – billabongs and creeks are gone forever, there are hills of poisonous rock and great holes in the ground with poisonous mud where there used to be nothing but bush*."

The Mirarr claim that the cumulative impact of uranium mining on them had led to 'social and economic statistics that were disastrous'[205] and believe that impacts of the Jabiluka mine will be similar to that of the Ranger mine, which began operations in 1981 in Kakdu's floodplain, where mine operations had resulted in the loss of the Mirarr's cultural significance and adversely affected all aspects of the Mirarr's lifestyle, including food collection, ceremony, customary law, spiritual connection and socio-political systems. Traditional owners once believed that the mine's operations might bring about economic benefits to the Aboriginal community; however, at present they are aware of the series of accidents stemming from the mine that have overshadowed the benefits.

According to the Mirarr: "*Mirarr do not argue that mining alone is impacting on living tradition – Mirarr argue that mining and its associated social, economic and political impacts are the single greatest impact and that an additional mine will push Bininj (Aboriginal) culture past the point of cultural exhaustion to genocidal decay*."[206]

204 World Nuclear Association. *Australia's Uranium and Nuclear Power Prospects*. www.world-nuclear.org/info/inf48.html

205 Stated by Jacqui Katona who was the public face of Yvonne Margarula's international campaign to prevent Jabiluka from being extracted.

206 The Gundjeihmi Aboriginal Corporation. *Mirrar Opposition to Uranium Mining*. www.mirarr.net/jabiluka.html

In relation to the Jabiluka site, the Mirarr people were concerned that the mine tailings may contaminate Aboriginal water and food resources. Also, they claimed that the government had failed to provide water, power, sewerage and housing to Aboriginal communities in the region, possibly due to government's supposition that uranium corporations in the region should be responsible for the provision of these services.

In 1999, the Mirarr's protests against the development Jabiluka mine led to their involvement in several court cases for trespass. Several Mirarr women led local opposition, including Jacqui Katona and Yvonne Margarula.[207] They established a non-profit organisation called the Gundjehmi Aboriginal Corporation, which mobilised national support, organised protests and initiated legal actions. In the meantime, uranium prices fell on the international market and the international nuclear industry went into decline. A combination of Aboriginal opposition, legal actions, appeals to international bodies together with the uranium market's poor performance caused Rio Tinto to announce in 2001 that the Jabiluka mine project was to be suspended for a period of ten years.

In 2002, uranium levels in a creek downstream of the Jabiluka mine site increased by six times above levels upstream of the mine. This demonstrated a possibility that polluted water at the Jabiluka mine could be contaminating clean water in the Kakadu National Park. The Mirarr people and environmental groups demanded that the environment at Jabiluka mine site be restored by implementing a site cleanup. The Northern Territory government approved of the cleanup in August 2003, after which ERA backfilled the mine with 50,000 tonnes of ore that had been unearthed. Although Jabiluka had never produced any uranium, several sacred sites may have been desecrated.

In 2005, considerable progress was made to the relationship between the indigenous groups and ERA with the signing of the Jabiluka Long-Term Care and Maintenance Agreement between the Mirarr, ERA and the Northern Land Council. The Agreement stipulates that future mining development of uranium deposits at Jabiluka by the ERA is not permitted without the written consent of the Mirarr and the Northern Land Council. The Jabiluka mine remains closed up to the present moment.

ERA has also established a new cultural awareness programme that allows for indigenous participation, and educates ERA employees about the importance of the cultures of traditional landowners and ways in which the cultures could be better preserved.

5.5.10.2 Mining at Koongarra

Apart from the existence of Aboriginal representation in relation to the Jabiluka uranium deposit, Aboriginal representation was also present with regard to the Koongarra uranium deposit. The Koongarra uranium deposit was discovered in 1970, and is located in the Northern Territory 30 km South of Ranger and 3 km East of the Nourlangie Rock. Like the Jabiluka and Ranger sites, the Koongarra uranium deposit is surrounded by the Kakadu National Park. The Koongarra project is currently managed by Koongarra Pty Ltd, a subsidiary of Areva. Areva is France's nuclear energy corporation and the world's largest maker of nuclear power plants, with plans to mine 14,000 tonnes of uranium at the Koongarra site. However, the Koongarra site is subject to the *Aboriginal Land Rights (Northern Territory) Act 1976*, which stipulates that the consent of traditional owners must be obtained before the Northern Territory Government can approve any application for an exploration licence.[208]

According to Section 42 of the Act: "*Where a Land Council*[209] *receives an application under Section 41 for consent to the grant of an exploration licence in respect of particular land…The Land Council shall not consent to the grant of the licence unless it has, before the end of the negotiating period, to the extent*

207 Both women were awarded the Goldman Prize in 1999 for their efforts. The Goldman Prize is a prize honouring grassroots environmentalists.

208 Within this context, on 29 May 2009, an Aboriginal Land Corporation had a historic win in the National Native Title Tribunal by denying an application for a mining lease by Holocene Pty Ltd over Lake Disappointment in Western Australia, marking the first time a company has failed to win a mining application on land granted under the *Native Title Act 1993*.

209 "Land Council" refers to an Aboriginal Land Council established by or under the *Aboriginal Land Rights (Northern Territory) Act 1976* - Section 3 of Act.

practicable – consulted the traditional Aboriginal owners of the land to which the application relates; consulted any Aboriginal community or group that may be affected by the grant of the licence to ensure that the community or group has had an adequate opportunity to express to the Land Council its views concerning the terms and conditions."

Within this context, Areva is required to attain the approval of the traditional owners at a meeting called by the Northern Land Council before Areva can attain an exploration licence. The traditional owners of the Koongarra site first objected to mining of Koongarra in 2000, resulting in a five-year moratorium on development plans. In 2009, the traditional owners remain opposed to mining of the Koongarra site.[210]

5.6 Conclusion

Within the context of representation and decision-making concerning the mining sector in Australia, major corporations play a significant role in initiating extractive projects that are subject to the approvals of State and Federal Governments. With regard to the case of the Olympic Dam expansion, the decision-making process involved stakeholder consultation in the form of community consultation sessions, briefings and workshops. BHP Billiton's public exhibition of its Draft Environmental Impact Statement allowed for individuals, communities and organisations to make comments, resulting in about 4,000 responses from members of the public.

In deciding whether or not to approve the Olympic Dam expansion, the Federal, South Australian and Northern Territory Governments have a duty under law to consider public submissions, in particular concerns related to negative impacts that may arise from an expansion of the Olympic Dam – for instance the clearing of native vegetation and associated fauna habitat, the excessive use of water as well as the substantial withdrawal of water from the Great Artesian Basin, the deterioration of Mound Springs, the proposed construction of a desalination plant and its adverse effects on marine life, the increased energy consumption ensuing in increased greenhouse gas emissions, the health hazards associated with radiation, the fear related to amplified risks of nuclear weapons proliferation, and the disturbances imposed upon Indigenous land. These potential negative impacts must be balanced with the positive impacts of an expansion, such as increased employment, increased opportunities for third-party businesses, and increased government and export revenues.

The governments, in their assessment of BHP Billiton's Draft Environmental Impact Statement, must consider ethical guidelines of ecologically sustainable development embedded in the country's legislation. These include economic, environmental, social and equitable considerations, the precautionary principle, inter-generational equity, conservation of biological diversity and ecological integrity, and improved valuation, pricing and incentive mechanisms.

BHP Billiton had affirmed in its Draft Environmental Impact Statement that it continues to maintain a relationship with Aboriginal communities through the Olympic Dam Agreement and the Heritage Management Protocol, thus conferring upon Aboriginal communities opportunities to participate in decision-making. There are instances where Aboriginal communities have succeeded in campaigning against mining activities on traditional land, such as those concerning the Jabiluka and Koongarra deposits, thus demonstrating that they occupy a role in decision-making. Nevertheless, under the circumstances it is essential to emphasize that indigenous communities suffer more grievances from long-term degradation of the land and environment than do non-Aboriginal people. Land provides the fundamental source of their identity, and their attachment to the land is spiritual as well as economic, social and environmental. In this regard, Australia must reflect on the international instruments it has ratified that are relevant to indigenous rights.

Whilst extractive corporations have an imperative function in driving the global economy, it is important that they are subject to stringent regulations and international principles so as to preserve the environment, achieve sustainable development, and sustain the rights and culture of the indigenous communities.

210 Australian Government. Department of the Environment. Water, Heritage and the Arts, *Koongarra*. www.environment.gov.au/ssd/supervision/arr-mines/koongarra.html

6. Decision-Making in Dam Building: Case Study of the Lancang Hydropower Cascade in Yunnan

6.1 Introduction[211]

Dams and their implications have long been sources of controversy.[212] In many nations, hydroelectric dams are vital mechanisms for national development. However, with pressure to develop, the impacts of hydroelectric dams on riparian communities within the vicinity of the projects are often secondary concerns for governments if the focus is on large energy or irrigation schemes. Additionally, it is not only those in the locality of a dam reservoir that are affected, but the citizens of communities (some who may be in other countries) located downstream because of reduced/controlled flow. Many of the intertwined issues of dam development and social participation were discussed by the World Commission on Dams, and included in their influential report.[213]

The following case study focuses on the Lancang-Mekong cascade in Yunnan Province of the People's Republic of China and outlines the circumstances of dam decision-making in the context of representation and development.

6.2 Origins of the World Commission for Dams

The social impact of large dams is an issue that was brought to global prominence in September 1994 when the Manibeli Declaration was submitted to the World Bank.[214] The Manibeli Declaration contained the signed approval of over two-thousand non-governmental organizations seeking an independent review of World Bank funded large dam projects. It called for a moratorium on dam construction funding on the basis that despite the "*enormous investment, no independent analysis or evidence exists to demonstrate that the financial, social and environmental costs were justified by the benefits realized.*"[215]

Since the formation of the Bretton-Woods system in 1944 and till 1992, the World Bank funded over 500 dam projects in 92 countries costing US$ 50 billion.[216] This represents over a third of global dam funding during that timeframe.[217] According to Navroz al., the Manibeli Declaration, along with growing public criticism of the World Bank's involvement in funding large-scale dam projects, led to the World Bank's Operations Evaluation Department developing a report entitled: '*World Bank Lending for Large Dams: A Preliminary Review of Impacts*'[218] which was completed in 1996. The Operations Evaluation Department's preliminary review concluded that the World Bank's funding of large dam hydroelectric projects was justified with some reservations. Despite this conclusion; as Navroz al., state "*it is evident that the World Bank was aware of the potential lack of legitimacy and limited use of a study that reflected only its views on*

211 This Chapter is written by Mr. Colum Graham.

212 Furthermore, when referring to 'dams', this report refers to large hydroelectric dams. A large dam according to the International Union for the Conservation of Nature has a wall over fifteen meters in height. We recognize that issues on construction of dams for irrigation may also overlap.

213 Publically released on 16 November 2000.

214 The Manibeli Declaration. 1994. *Calling for a Moratorium on World Bank funding of Large Dams.* http://www.internationalrivers.org/en/follow-money/manibeli-declaration (Accessed 19 August 2009).

215 *Ibid.*

216 1992 US currency rate.

217 The Manibeli Declaration.

218 OED Précis. 1996. *World Bank Lending for Large Dams: A Preliminary Review of Impacts*. Number 125, September 1996. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2004/05/13/000011823_20040513123113/Rendered/PDF/28695.pdf (Accessed 19 August 2009).

the contentious debate around large dams."[219] With regards to this awareness, the World Bank organized a meeting to be co-convened by the International Union for the Conservation of Nature (IUCN) that was held in April 1997 at Gland in Switzerland.

One month before the Gland meeting, the 'First International Meeting of the People Affected by Large Dams' occurred in Curitiba, Brazil. The Curitiba meeting was attended by persons from 20 countries who argued that they had been adversely affected by damming. This meeting resulted in the 'Curitiba Declaration.' Similar to the Manibeli Declaration, the Curitiba Declaration states in section 3.e. that *"…An international independent commission is established to conduct a comprehensive review of all large dams financed or otherwise supported by international aid and credit agencies."*[220] Unlike the Manibeli Declaration, the Curitiba Declaration had an expansive framework of concern. Whereas the Manibeli Declaration was specifically focused on the actions of the World Bank, the Curitiba Declaration condemned the decision-making process behind large dam construction. The Curitiba Declaration's second statement is: "We will oppose the construction of any dam which has not been approved by the affected people after an informed and participative decision-making process."[221] Navroz al., comment that the Curitiba and Manibeli Declarations reflected a growing international movement concerning the interests of "*significant voices, possibly of silent majorities*" that would contribute to the creation of global norms in relation to participation and dam construction.[222]

The Gland meeting of April 1997 in Switzerland paved the way for the World Commission on Dams (WCD). The Gland meeting, hosted by the World Bank and the IUCN, had representatives from a broad range of interest groups concerned with dams. Participants in the meeting came from governments, think-tanks, NGOs, businesses, universities and professional associations to discuss the role of dams in sustainable development. The meeting concluded with an agreement to have the World Commission on Dams for two years. According to the Workshop Proceedings of the Gland meeting, the WCD was to reference these guidelines:

- To assess the experience with existing, new and proposed large dam projects so as to improve (existing) practices and social and environmental conditions;
- To develop decision-making criteria and policy and regulatory frameworks for assessing alternatives for energy and water resources development;
- To evaluate the development effectiveness of large dams;
- To develop and promote internationally acceptable standards for the planning, assessment, design, construction, operation and monitoring of large dam projects and, if the dams are built, ensure affected peoples are better off;
- To identify the implications for institutional, policy and financial arrangements so that benefits, costs and risks are equitably shared at the global, national and local levels; and
- To recommend interim modifications, where necessary, of existing policies and guidelines, and promote "best practices."[223]

219 Navroz K. Mairi D. Smitu K. and Tundu L. *The Origins of the World Commission on Dams* in 'A Watershed in Global Governance?', World Resources Institute, November 2001, p. 29 http://pdf.wri.org/wcd_chapter_3.pdf (Accessed 19 August 2009).

220 The Curitiba Declaration. 1997. *Affirming the Right to Life and Livelihood of People Affected by Dams'*, March 1997 http://www.internationalrivers.org/en/curitiba-declaration (Accessed 21 August 2009).

221 *Ibid.*

222 Navroz K. Mairi D. Smitu, K. and Tundu, L., p.31.

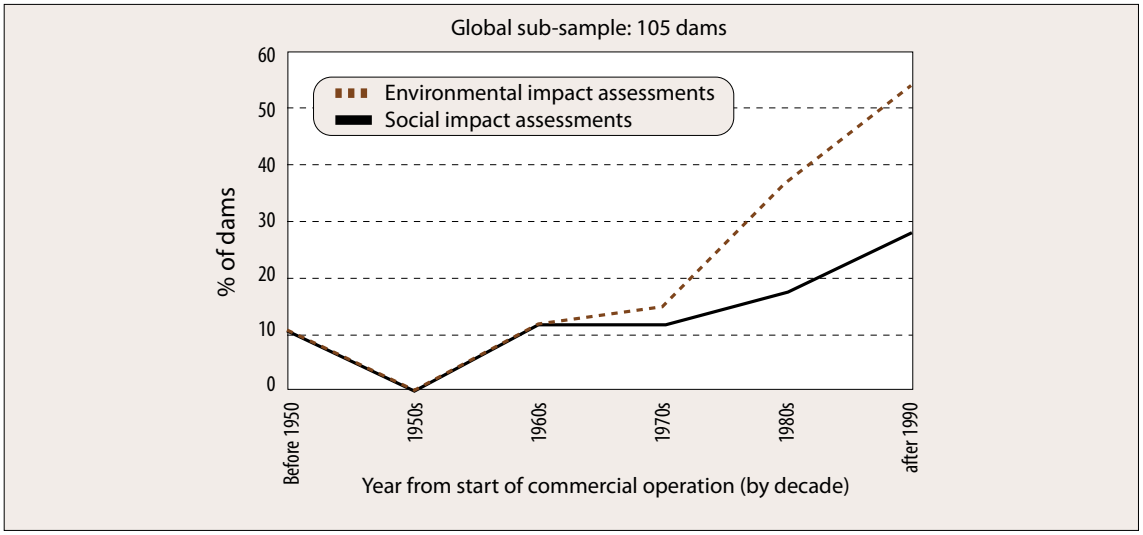
223 Dorcey T., Steiner A., Acreman M., and Orlando, B. (eds). 1997. Large Dams: Learning from the Past, Looking at the Future ' Workshop Proceedings. Gland, Switzerland, April 11-12, 1997, pp. 9-10. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1999/09/17/000178830_98101912310448/Rendered/PDF/multi_page.pdf (Accessed 21 August 2009).

6.3 Decision-Making Processes Examined by the World Commission on Dams

As outlined above, the WCD report was the result of a sustained demand for a participatory review process. The WCD was made by a diverse commission of researchers and is a comprehensive analysis of large dams. The analysis included economic, environmental, social impacts as well as analysis of energy production and decision-making processes. The WCD report was composed in May 1998 and was released to the public in November 2000. Twelve commission members were drawn from diverse spectrums of large dam interest groups. Financial support for the WCD was also diverse and came from 53 different organizations including governments, businesses, NGOs, international agencies, associations and foundations.

The report concluded that large dams built for hydropower met their financial goals. However, the impacts of large hydroelectric dams on ecosystems were reported to be negative. With regards to ecosystem damage, the WCD reported results of a cross check survey that found that 60 per cent of the negative impacts were 'unanticipated' before the project began.[224] It also found that ecosystem problems were accentuated when a succession of dams were built along a river.[225] The WCD reported that over 50 years, anywhere from 40 to 80 million people had been displaced by dam reservoirs.[226] With regards to decision-making and dam projects resulting in this mass displacement, the WCD found that once projects had gathered enough thrust (i.e. when proposals had passed preliminary financial and technical reviews and gained preliminary approval from funding agencies or governments) the project would be built irrespective of other assessments.[227] Consequently, dams built in this manner cannot be in line with what is outlined in section 1.3 of this report entitled 'Limits to the Principle of State Sovereignty' vis-à-vis the right to participation found in the Stockholm Declaration.

Figure 3: Growing Use of Impact Assessments on Dams over time



Source: WCD. Decision-Making, Planning and Compliance.[228]

Moreover, from the thirty-four dams in the WCD Cross-Check survey, *"only seven required participation as part of the decision-making process."* It then goes on to state that *"While there has been a growing emphasis on transparency and participation in decision-making involving large dams, especially in the 1990s, actual*

224 The Report of the World Commission on Dams. 2000. *Dams and Development: A New Framework for Decision-Making*. Earthscan Publications, p. 89.

225 *Ibid,* p. 88.

226 *Ibid,* p. 104.

227 *Ibid,* p. 168.

228 *Ibid,* p. 187.

change in practice has been slow."[229] The Cross-Check survey states that despite participation in the planning process for large dams has been increasing, around half of projects commenced post 1990 still did not involve public participation.[230] In relation to social impact assessments (SIA), of the 105 dams surveyed in the global sub-sample in the WCD, approximately 38 per cent of dams from their start of commercial operation post 1990 implemented a SIA (see Figure 3).[231] Furthermore, as the WCD states that even when there has been participation in the decision-making process often it is not adequately reflective of affected groups' interests.[232] Consequently it is worth quoting the Commission's review of the participatory process for affected people when they had been involved:

- Insufficient time, resources and information have been made available for public consultations;
- The spectrum of participants was usually very narrow, ignoring rural communities, indigenous groups and women, and affected people's organisations whose effective participation may be constrained both culturally and linguistically;
- Where opportunities for participation of affected peoples and NGOs representing affected groups have been provided, they often occur late in the process and are limited in scope. Moreover where substantial differences arise, those seeking to modify plans and decisions often must resort to legal or other action outside the normal planning process;
- There was a generalised failure to involve affected people in the design and implementation of project monitoring and follow-up; and
- The government agency staff leading the discussions had often been trained only in one sector (such as engineering) and this reduced the scope for promoting a multi-disciplinary approach.[233]

With regards to *"Insufficient… information* [has] *been made available for public consultations"*, 60 per cent of dams in the WCD sub-sample after 1990 had transparent information available for affected people.[234] The WCD states that the lack of information available to affected peoples is detrimental to their ability to have a say in the project implementation or to discuss alternative energy procurement options.[235] Access to information is a prerequisite for informed decision-making, which as argued in the introductory chapter of this report, is legally necessary.

In addition to the lack of available information access locally, access to information about domestic river use from outside the locality (e.g. through websites or publications) is also limited. In relation to the exertion of state sovereignty without restraint, section 1.2 of this report states that *"it would also be acceptable for one country to divert a river in order to stop its flow into a neighbouring country."* The WCD elaborates on this point by noting that there are several transboundary rivers which lack comprehensive agreements that define how a river is to be equitably shared. It states that "*the lack of agreements on water use within shared river basins is an increasing concern and cause for conflict particularly as demands grow and unilateral decisions to build large dams by one country alter supply within a basin with significant consequences for other riparian states.*"[236, 237] Furthermore, because of the lack of binding international agreements on water sharing, states are able to take unilateral action and continue "*to build dams without adequate information sharing.*"[238] This lack of information sharing reflects a disregard for the precautionary principle outlined in Chapter 1.4 of this report.

The WCD mentions that unrestrained sovereignty in relation to river sharing reflects the political economy of the upstream-downstream relationship, particularly when the upstream nation has an asymmetrical

229 *Ibid,* p. 176.

230 *Ibid.*

231 *Ibid,* p. 187.

232 *Ibid,* p. 178.

233 *Ibid,* p. 177.

234 *Ibid.*

235 *Ibid,* p. 178.

236 *Ibid,* p. 176.

237 Refer to ECCAP WG14.

238 *Ibid,* p. 175.

relationship with a downstream country. With regards to nations in upstream positions, the WCD stated that: "*A regional power that holds an upstream position is in a better situation to implement projects without consultation, and this has been the case in Turkey, India and China.*"[239] This lack of consultation is not in line with the Stockholm Declaration which, referenced in Chapter 1.3 of this report, articulates that state sovereignty should be limited so as to responsibly "*ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.*"[240] By consulting downstream countries of proposed projects, the WCD recommends that future damage could be mitigated through more timely cooperation and preparation.

The present Climate Change crisis, which is a crisis beyond the limits of national jurisdiction, can be abated by introducing minimal emission power generating technologies such as hydropower. The WCD reports while there are some greenhouse gas emissions from rotting vegetation in reservoirs and carbon inflows from catchments, there must be more research done to determine the effect this has on climate change.[241] The impact will also depend upon the previous land use prior to flooding. However, hydropower is widely regarded as an emissions-free technology when compared to coal, oil and gas-fired energy production.[242]

6.4 The Context of Energy Development in the People's Republic of China

6.4.1 Energy in the People's Republic of China

Climate Change is a significant issue in the People's Republic of China (PRC), where intensive coal fired industrialization makes China the World's leading greenhouse gas emitter. China has drawn substantial international criticism for pursuing coal-fired energy production. According to the United States Department of Energy, coal use in 2006 accounted for approximately 70 per cent of energy production in China.[243] Despite this, the NGO 'The Climate Group' reports that China is the World's largest producer of renewable energy.[244] Indeed, in 2006, 6 per cent of China's total energy production came from hydropower.[245] Over the past 20 years, China has engaged in intensive large dam construction. Pursuing renewable energy sources like hydroelectric power is seen as a way of offsetting large greenhouse emissions while maintaining the exponential energy production required for constant national socio-economic progression. China's pursuit of renewable energy sources reflects the seventh objective of the Millennium Development Goals (MDGs) which is to 'Ensure Environmental Sustainability.'

The Declaration on the Right to Development was adopted by the UN General Assembly in the December of 1986. Article 1 stipulates that "*The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development in which all human rights and fundamental freedoms can be fully realized.*"[246] Almost all countries associate development with increasing energy consumption.[247]

239 *Ibid,* p. 174.

240 See section 1.3.

241 *Ibid,* p. 75.

242 Fortin, P. 2002. Hydropower, environmental stewardship and climate change. Hydropower and Dams, Issue Number Three, p. 39-42. http://www.canhydropower.org/hydro_e/pdf/Hydropower,%20Environmental%20Stewardship.pdf (Accessed 23 August 2009).

243 US Department of Energy. 2006. Energy Information Administration. *China Energy Data, Statistics and Analysis – Oil, Gas, Electricity, Coal*. http://www.eia.doe.gov/cabs/China/Background.html. (Accessed 23 August 2009).

244 The Climate Group. 2008. *China's Clean Revolution.* http://www.theclimategroup.org/assets/resources/Chinas_Clean_Revolution.pdf (Accessed 23 August 2009).

245 *Ibid.*

246 Resolution 41/128. 1986. *The Right to Development.* p.2 http://www2.ohchr.org/english/law/pdf/rtd.pdf (Accessed 27 August 2009).

247 Refer to the case of Bhutan in ECCAP WG5 report.

Demand for energy is increasing in China at a greater pace than in any other nation. China recently overtook the USA as the world's largest energy producer. Development in China has moved along at a rapid pace since the economic reforms that were instigated in 1978. China's National Bureau of Statistics announced that the income of residents since 1978 has grown 7.1 per cent per annum.[248] China has achieved this rate of growth while its population increased by approximately 326 million people between the end of 1978 and September 2009.[249] China has also achieved this growth for residents while reducing poverty from 53 per cent of the population in 1981 to 8 per cent of the population in 2001.[250]

However, despite progress in alleviating poverty for hundreds of millions of people since the economic reforms instigated in 1978, there are significant populations living below the World Bank's poverty line in China. The number of people living below China's national poverty threshold was around 30 million in 2007.[251] Of those official 30 million, 15 million people are living in 'rural areas.'[252] However, according to a recent World Bank review (released in March of 2009) of China's poverty eradication policy, the national poverty line is around US 0.71 cents per day (using 1993 prices) and according to the review below the World Bank's current official poverty line of US$ 1.25 per day. The review makes note that China's "*stringent*" national poverty line is too low.[253] The review estimates that there are 254 million people living under US$ 1.25 per day, much more than the officially recognized 30 million. Moreover, the World Bank review reports poignantly that those living in the Western provinces are two to three times more likely to be *persistently* poor than any of the other regions in China.[254] The Western region refers to the municipality of Chongqing; the autonomous regions of Guangxi, Nei Menggu (Inner Mongolia), Ningxia, Xinjiang and Xizang Zizhiqu (Tibet Autonomous Region); and the provinces of Gansu, Guizhou, Qinghai, Shanxi, Sichuan and Yunnan. As of 2004 China's National Bureau of Statistics estimates that 58.6 per cent of those living under the official poverty threshold are surviving in the Western region.[255] After the 1978 economic reforms, development of the Western provinces has been pursued vigorously by China leadership.

248 Anonymous. 2008. *Residents' Income grows 7% annually since 1978.* China Daily. http://www.chinadaily.com.cn/china/2008-11/01/content_7164734.htm (Accessed 27 August 2009).

249 Popline. 1980. *China's Population, 1978.* POPLINE Document Number 006451 http://www.popline.org/docs/0511/006451.html (Accessed 28 August 2009).

250 Ravillion, M. 2005. *Fighting Poverty: Finding Lessons from China's success'*, The World Bank. http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,contentMDK:20634060~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html. (Accessed 28 August 2009).

251 Amhad Y. and Goh C.C. 2007. *Poverty Maps of Yunnan Province, China: Uses and Lessons for Scaling Up'*, in Bedi T., Coudouel A. and Simler K. eds. 'More than a Pretty Picture: Using Poverty Maps to Design Better Policies and Interventions', The World Bank. p.144. http://siteresources.worldbank.org/INTPGI/Resources/342674-1092157888460/493860-1192739384563/10412-07_p143-152.pdf (Accessed 28 August 2009).

252 Pumin, Y. 2009. *Raising up the Poor.* Beijing Review, No. 33 August 20, 2009. http://www.bjreview.com.cn/nation/txt/2009-08/16/content_212178.htm (Accessed 28 August 2009).

253 Datt G. and Chaudhuri, S. 2009. *From poor areas to poor people: China's evolving poverty reduction agenda: An assessment of poverty and inequality in China*. Poverty Reduction and Economic Management Department. The World Bank, March 2009, p.iii. http://siteresources.worldbank.org/CHINAEXTN/Resources/318949-1239096143906/China_PA_Report_March_2009_eng.pdf (Accessed 29 August 2009).

254 *Ibid,* p. 23.

255 Rural Survey Organization. 2004. *Poverty Statistics in China.* China National Bureau of Statistics, September 2004, p. 8. http://www.nscb.gov.ph/poverty/conference/papers/4_poverty%20statistics%20in%20china.pdf (Accessed 29 August 2009).

6.4.2 Decision-Making at the National Level

Decision-making in China on a national level is exercised by both the Communist Party of China (CCP) and the State Council which are both based in the capital Beijing. Membership to the State Council is determined by the National People's Congress. The National People's Congress is the most powerful legislative body in China. It has the power to remove from office the President and Vice President, Premier and Vice Premier, Ministers of the State Council and other senior law making officials.[256]

People's Congresses are found at township, county, prefectural, provincial and the national level.[257] Lower level (local, county, prefectural and provincial) administrations have the same dual leadership model that the CCP and the State Council have at national level. Participatory elections occur at citizenry level for a local (e.g. a township or village) people's congress. At all other tiers (county, prefectural, provincial and national) officials are elected to higher office by only those in the people's congress below them (e.g. people's congress members from the provincial level elect officials to the National People's Congress.)[258] The proportion of women in the National People's Congress is 21.33 per cent.[259] The National People's Congress consists of three thousand members who serve five year terms. Decisions are reached consensually by congresses.

The State Council is the chief administrative body of the National People's Congress. The State Council consists of fifty ministers or heads of bureaucratic agencies and departments. The leader of the State Council holds the title of Premier. While it is not a requirement to be a member of the CCP to be elected to a People's Congress body, membership is essential to rise to a position higher than a local level People's Congress.[260] This is because the indirect election system in the higher congress levels is controlled by CCP members who are unlikely to elect a party outsider.

The CCP is the main political party in China. The CCP is the world's largest political party with over 75 million members.[261] Since the presidency of Jiang Zemin, the President of China has held the highest ranking position in the CCP which is titled General Secretary.[262] The President is also the spokesman for China's foreign policy. The distribution of power within the CCP is divided into various committees and departments. They include: the General Office, the Central Organisation Department, the United Front Department, the Propaganda Department, the International Liaison Department and the Central Committee. The Central Committee is the most powerful organizational body within the CCP. Approximately two hundred members are elected to the Central Committee by over two thousand CCP delegates at the National Party Congress which is held every five years in Beijing. The Central Committee's primary purpose is to elect the Politburo and the Politburo Standing Committee which are made up of 24 and 9 members respectively. The Communist Party is ultimately directed by the Politburo Standing Committee.[263]

The CCP led National People's Congress and State Council are the organs that govern China within the context of the central government. Other institutions within the central government include the Presidency, the Central Military Commission, the Supreme People's Court and the Supreme People's Procuratorate. Policy is created by "*a complex matrix of Party elites, and relevant bureaucracies and*

256 Article 63. *Constitution of the People's Republic of China*. December 4, 1982. http://english.peopledaily.com.cn/constitution/constitution.html (Accessed 4 September 2009).

257 E.g. Provincial People's Congress.

258 Section 5. *Constitution of the People's Republic of China*. December 4, 1982. http://english.peopledaily.com.cn/constitution/constitution.html (Accessed 4 September 2009).

259 Inter-Parliamentary Union. *Quanguo Renmin Daibiao Dahui. [National People's Congress]: General Information about the Parliament*. http://www.ipu.org/parline/reports/2065_A.htm (Accessed 4 September 2009).

260 Shirk, S. 2007. *China: Fragile Superpower*. Oxford University Press NY. p. 40.

261 Vela, J. 2009. *The Secret of the CCP's success.* Asia Times. http://www.atimes.com/atimes/China/KJ03Ad01.html. (Accessed 8 October 2009).

262 Shirk, S. p. 40.

263 *Ibid,* p. 41.

interests, which interact to produce decisions through extensive bargaining and coordination."[264] The CCP's leadership directs the aims of the project. The project's policy and its framework for implementation are made by the State Council. A policy eventually makes its way to the National People's Congress to potentially be sanctioned.[265]

In relation to economic and social development, policy is planned by the National Development and Reform Commission (NDRC) of the State Council. The NDRC is made up of thirty-three bureaucracies.[266] The NDRC is responsible for development planning for China. The main function of the NDRC is "*To formulate and implement strategies of national economic and social development, annual plans, medium and long-term development plans.*"[267] The NDRC has provincial counterparts (i.e. Yunnan Development and Reform Commission) that perform the same duty, but on a provincial level. The NDRC bureaucracies' strategies of national economic and social development are outlined to the National People's Congress for approval every five years in the form of 'Five-Year Plans' by the State Council.

Five-year plans are socio-economic development initiatives and have underpinned China's sustained development since 1953. The proposal for the tenth five-year plan (2001-2005) states that "*The implementation of the Western development strategy is of great significance to the country's economic development, national solidarity and social stability. It is also a key step in achieving the country's strategic goal of building a well-to-do society in all areas of life in the new century*."[268] By referring to the construction of a '*well-to-do*' society, it is clear that the development in the Western regions of China implies improving social welfare standards. The multiple layers of government are known to affect the environment and water.[269]

6.4.3. The Western Development Strategy

Development of the Western provinces is a major priority for China. One of the ways in which Western development is to be propelled is for the natural resource-rich West to provide fuel for the rapidly developing Eastern provinces. Darrin Magee notes that China has pursued a policy of energy transfer in the Western region since the 1980s, with several campaigns (e.g. 'Send Western Electricity East' or 'Xi Dian Dong Song') promoting energy transfer from Western provinces to the Eastern coastal regions.[270] China's continued growth depends on a reliable source of electricity. The major centers of economic development (Guangdong Province, and the cities of Shanghai and Beijing) had in the past been found to be lacking a constant supply of electricity with blackouts and planned shortages frequent.[271] With

264 Chin G.T. 2004. *The Politics of China's Western Development Initiative*, in Lu D. and Neilson W. (eds). China's West Region Development: Domestic Strategies and Global Implications. World Scientific Publishing, p. 138.

265 *Ibid.*

266 The thirty-three bureaucracies include the Departments of Policy Studies, Development Planning, National Economy, Economic System Reform, Fixed Asset Investment, Foreign Capital and Overseas Investment, Regional Economy, Western Region Development (aka Office of the Western Region Development Leading Group), Northeastern Region Revitalization, Rural Economy, Basic Industries, Industry, High-Tech Industry, Resource Conservation and Environmental Protection, Climate Change, Social Development, Employment and Income Distribution, Trade, Fiscal and Financial Affairs, Price, Price Supervision, Laws and Regulations, International Cooperation and Personnel; the Bureau of Economic Operations Adjustment, the Bureau of Retired Officials, and the State Bureau of Material Reserves; the General Office, the Office of National Economic Mobilization and the Office of Key Project Inspectors; and finally the NDRC Party Committee

267 National Development and Reform Commission (NDRC). *Main Functions of the NDRC*. http://en.ndrc.gov.cn/mfndrc/default.htm (Accessed 6 September 2009).

268 China Internet Information Center. Guidelines. *Premier Zhu Rongji's Explanation of 10th Five-Year Plan Drafting*. http://china.org.cn/e-15/15-3-g/15-3-g-1.htm (Accessed 6 September 2009).

269 Refer to the case Study in ECCAP WG14.

270 Magee, D (a). 2006. *Powershed Politics: Yunnan Hydropower under Great Western Development*. China Quarterly No. 185, 2006, p.25. http://www.cctr.ust.hk/materials/library/20061026_Magee2006CQ185.pdf (Accessed 7 September 2009).

271 Magee, D (b). 2005. *The Science of China's Hydropower*. Role of Water Sciences in Transboundary River Basin Management, Thailand, p. 183 http://www.mekongnet.org/images/7/72/Darrin.pdf (Accessed 28 August 2009).

the growth of economic exchange for energy, the Western provinces are able to develop in a 'leap-frog' manner.

On 17 June 1999 in the city of Xi'an, then President Jiang Zemin appealed to citizens of China to overcome regional inequality.[272] In the following November, the Western Region Development Strategy (WDS – or Xibu Dakaifa) was implemented as official China state policy. The WDS ultimately aims to extenuate the economic disparity between Eastern China and Western China. Premier Zhu Rongji announced upon establishing the WDS that "*the government should promptly announce preferential policy and pleasures to support the Strategy for Developing the Western Region, designed to strengthen the fiscal subsidies system, regional government and investment of construction funds, and encourage investment in the West by foreign capital enterprises and from other regions of China*."[273] In order to alleviate economic disparity in the West, the WDS is a framework for implementing: *"(1) major construction projects in areas of transportation, telecommunications, electricity transmission networks and urban infrastructure, (2) policy measures to support development of the Western region, and (3) infusion of construction funds and increased fiscal subsidies."*[274] With regards to the first framework point: "*major construction projects in … electricity transmission networks*", substantial economic development in China has occurred fastest in major city centers along the East coast and away from rural areas in the country's West as a result of reforming the PRCs command economy to a market-based economy.[275]

The WDS has followed the regular course of policy determination as outlined above, but on historically unprecedented scale. With regards to decision-making and the WDS, the Politburo Standing Committee *"set the main priorities and basic general line."*[276] WDS policy formulation was done at the State Council amongst the various relevant departments and bureaucracies. According to Chin, since the official launch of the WDS, the State Council has attempted to have decision-making processes in the WDS more institutionalized.

In order to achieve a more institutionalized process, a number of 'Leading Groups' were established. The most prominent of these is the Western Region Development Leading Group (WRDLG). Upon establishing the WDS in 1999, the State Council approved the WRDLG *to "carry out the decision made by the Party Central Committee, to speed up the development of the Western region."*[277] Both former Premier Zhu Rongji and former Vice Premier Wen Jiabao (who is the current Premier) were assigned to chair and vice chair the Western Region Development Leading Group (WRDLG) on its inception. For Chin, that the two most prominent members of the State Council were appointed to head the WRDLG reflects the regard that the project was held in by 'leadership.'[278] Moreover, the WDRLG is different from other Leading Groups because it is a permanent organization. Most Leading Groups are established as informal dialogue instruments but are not permanent and do not have offices, whereas the WDS Leading Group office was established in 2001.[279] The WRDLG contains ministers and ministerial level officials from the State Council. Consequently, for Holbig, the State Council is more responsible for directing the WDS directly than the CCP itself. Holbig says that *"…its* [the WDRLG] *composition was much closer to*

272 Lai, H.H. 2002. *China's Western Development Program: Its Rationale, Implementation, and Prospects*. Modern China No.28, p. 436. http://www.case.edu/affil/tibet/tibetanNomads/documents/ChinasWesternDevelopmentProgram_000.pdf (Accessed 28 August 2009).

273 Onishi, Y. 2001. *Chinese Economy in the 21st Century - the Strategy for Developing the Western Region*. Spot Survey No.22. China's Western Development Strategy: Issues and Prospects, Institute of Developing Economies', Japan External Trade Organisation, December 2001, p. 11. http://www.ide.go.jp/English/Publish/Download/Spot/pdf/22_3.pdf. (Accessed 3 September 2009).

274 *Ibid,* p.10.

275 Lu, Z.G. and Song, S.F. 2004. *China's Regional Economic Disparities* in eds. Lu, D. and Nielson W.A.W ' eds China's West Region Development: Domestic Strategies and Implications World Scientific Publishing, Singapore, p. 522.

276 Chin, G.T., p. 138.

277 *Ibid,* p. 139.

278 *Ibid.*

279 Holbig, H. 2004. *The Emergence of the Campaign to Open Up the West: Ideological Formation, Central Decision-making and the Role of Provinces*, in Goodman D.S.G. (eds). China's Campaign to "Open Up the West": National, Provincial and Local Perspectives. Cambridge University Press, p. 30.

a board with vague consultation and coordination functions than a specialized administrative organ with clear-cut competences."[280] This is due to the wide variety of departments required to implement such a broad development policy. According to Zheng Yuxing and Qian Yihong, some senior leaders of China government have stressed the importance of environmental protection in relation to the WDS. However, the WRDLG did not include the State Environmental Protection Agency in its membership.[281]

There are overlapping responsibilities between members of the WRDLG and the NDRC. Chin notes that the Office of WRDLG reports directly to one of four of the State Development Planning Commission (SDPC – the precursor organization to the NDRC) Vice Ministers because of the importance of Western regional development. At the time of WRDLG implementation, there overlapping responsibilities between WDRLG and NDRC members. Chin observes "*Below the Chair and Vice Chair [Zhu Rongji and Wen Jiabao], SDPC Minister Zeng Peiyan is the Director of the Office of Western Region Development LG, while SDPC Vice Ministers … are vice directors [of the Office of WRDLG] … The Office is mainly staffed by officials of the SDPC and it is generally regarded as a bastion of SDPC influence.*"[282] According to Chin, Zeng Peiyan was one of President Jiang Zemin's most trusted advisors. Zeng Peiyan later held the position of Vice Premier from 2003 till 2008. The WRDLG contains members of the central government who are able to exert substantial influence over decisions of state.

6.4.4 The Evolution of China's Energy Administration

In China, the central government balances non-interference and exerting its authority in the energy sector. This is reflected in Article 16 of the Constitution of China which states: "*State enterprises have decision-making power in operation and management within the limits prescribed by law, on condition that they submit to unified leadership by the state and fulfill all their obligations under the state plan.*"[283] The state plan (referring to the five-year plans) emanates from a socialist system.[284] Consequently when enterprises started to become protectionist, they were not complying with the socialist paradigm of China. Zhao observes that "*When the central government found that it controlled too much, it would give more power to local governments or industries; when it found that it had lost control, it would take back some authority.*"[285]

According to a World Bank review of China's energy administration "*the sector has suffered from systemic problems such as a piecemeal approach to restructuring, slow development of a regulatory framework leading to inefficiencies and abuses of monopoly/monopsony power, mismatch between loan maturities and economic lives of power projects, inadequate wholesale electricity and transmission pricing regimes, and low efficiency of electricity supply and use.*"[286] These systemic problems are evident in the history of energy administration in China.

From the 1980s, the central government exerted less control over energy institutions. In August 1980, the State Energy Commission was established. It aimed for consistent management of the entire energy

280 Yuxin, Z. and Yihong, Q. 2004. *Eco-Environmental Protection and Poverty Alleviation in West China Development*, in Lu D. and Neilson W. eds. China's West Region Development: Domestic Strategies and Global Implications. World Scientific Publishing, p. 33.

281 Holbig, H., p. 31.

282 Chin, G.T., p. 143.

283 Article 16. *Constitution of the People's Republic of China*. December 4, 1982. http://english.peopledaily.com.cn/constitution/constitution.html (Accessed 14 September 2009).

284 Article 15. *Ibid.*

285 Zhao, J. 2009. *Reform of China's Energy Institutions and Policies: Historical Evolution and Current Challenges*. BCSIA Discussion Paper 2001-20, Energy Technology Innovation Project, Kennedy School of Government, Harvard University, p. 8. http://belfercenter.ksg.harvard.edu/files/zhao.pdf. (Accessed 14 September 2009).

160 The World Bank. 2009. *China and Energy*. The World Bank. http://go.worldbank.org/7P2GRNVFV0 (Accessed 14 September 2009).

sector.[287] The State Energy Commission was disbanded in 1983 to make way for the Ministry of Water Resources and Electric Power which was the result of a merger between the Ministry of Electric Power Industry and the Ministry of Water Resources Utilization.[288] Zhao notes that the disbanding of the State Energy Commission was to simplify the institutional structure. Gradually ministries concerned with energy were divided up into corporations from 1985. The simplification of the institutional structure was to be done through removing government control over the energy sector and consequently allowing the recently established corporations more control. The corporations were to be managed to an international standard.[289] By 1988, the Ministries of Water Resources and Electric Power, Coal Industry, Nuclear Industry and Petroleum Industry were disbanded and were replaced with the Ministry of Energy. The Ministry of Energy was to manage the corporations but its authority was limited to making national energy strategy and overseeing large energy related development projects.[290] Also in 1988, China Investment Energy Corporation was formed which was to make national investments in the corporate energy sector.[291] According to Zhao, this period of decentralization ended in 1993 when the central government dissolved the Ministry of Energy and established the State Economic and Trade Commission to more effectively manage the SDPC energy plans for China.[292]

Therefore during the time of decentralization through the 1980s, local administrations gradually gained formal participatory power from the national administration. Up until the central government retook control of the energy industry in 1993, local regulation was also relaxed. Local administrations were able to have a greater power over their funds through tax reform and quota contracts with the central government.[293] Because local administrations had more flexibility, they were able to invest in and assert control over local infrastructure. Local administrations were even able to approve small-scale hydroelectric plants within their jurisdiction. Zhao observes that the reasoning behind the central governments reaction to decentralization and its subsequent reestablishment of stronger ministerial level energy control was that with local administrations control over tax revenue (which did not have to be proportionately redistributed at the national level), the amount of national deficit increased which consequently weakened the central governments' ability to control financial distribution.[294]

The Ministry of Energy was abolished in 1993 because it did not have enough institutional authority to take back control that the central government had lost. The central government increased its control by establishing new government ministries and state-run energy investment companies like the 'State Development and Investment Corporation' (SDIC) which was established in 1995.[295] During this time, the energy sectors and their corresponding corporations became more vigorously supervised by the central government. This resulted in overall poor economic and productivity performance. For Zhao the reality of *"…mixing of government and business activities, the overlapping responsibilities of different government departments, over-staffing, inefficiency, and conflicts of interests among government agencies"*[296] was contrary to the goal of improving 'economic efficiency' contained within the 7th (1986-1990) five-year plan.[297]

287 Lieberthal, K. and Oksenberg, M. 1988. *China's Involvement with the Outside World: The Case of Petroleum, 1959-84* in 'Policy Making in China: Leaders, Structures, and Processes'. Princeton University Press, 1988, p. 254.

288 Zhao, J. p. 4.

289 Magee, D. (b), p. 184.

290 Zhao, J.. p. 6.

291 *Ibid.*

292 *Ibid,* p. 11.

293 Where rather than giving the central government a percentage of tax revenue, local governments only had to give a quota and the remaining funds they could use themselves.

294 Zhao, J., p. 7.

295 State Development & Investment Corp. *About SDIC*. http://www.sdic.com.cn/en/about/A0201index_1.htm. (Accessed 16 September 2009).

296 Zhao, J., p. 9.

297 Central People's Government of the People's Republic of China Portal. 2006. *The 7th Five-Year Plan (1986-1990)*. http://www.gov.cn/english/2006-04/05/content_245695.htm (Accessed 17 September 2009).

Therefore because economic growth was stifled in the energy sector, the central government acted to rectify the energy sector once more.[298] In order to reinvigorate economic growth in the energy sector, the central government relaxed bureaucratic policy interfering in energy production in the mid nineties. In forming the State Power Corporation (SPC) in January of 1997, the central government's aim was to manage an effective nation wide power network whilst engaging in a market economy framework.[299] According to Magee, all investment for the SPC came from the State Council.[300] Furthermore, the abolishment of the Ministry of Electric Power in March of 1998 was to prevent further bureaucratic interference. The Ministry of Electric Power was replaced by the State Economic and Trade Commission which was to be a more market orientated regulatory body while the SPC made state-backed investments.[301]

However, in April 2002, the central government began another comprehensive restructuring process called the 'Scheme of Reform for Power Industry' to dismantle what had become a monopolized industry. The industry needed to be dismantled so as to increase competitiveness and foster price reduction for local consumers and *"to set up an open, orderly and well-developed power market system based upon the principles of separation of administration and enterprise and equal competition under the regulator of government."*[302] The April 2002 reforms of the energy industry resulted in the central government breaking up the SPC into private companies. Two of the main companies are major transmission grids and five are major electricity generating companies. The two major power transmission grids are the State Power Grid and China Southern Power Grid. Relevant to the following case study, China Southern Power Grid has subsidiaries, one of which is called Yunnan Power Grid Company. The five major electricity generating companies are China Datang Group, China Huadian Corporation, China Guodian Corporation, China Power Investment Corporation, and China Huaneng Group.[303] In March 2003, these companies came under the jurisdiction of the State Electricity Regulatory Commission (SERC) which is responsible for *"supervising and regulating market competition in the electricity industry. It will also issue licenses to operators in the industry, monitor their operations and hold them to account for violations of pricing and competition rules."*[304] The SERC operates as a regulation agency directly under the State Council. However, Downs observes that the companies were exerting their own corporate interests ahead of national priorities.

From the 10th NPC meeting in March 2003, there had been a growing consensus that there needed to be a departmental authority once again (like the Ministry of Energy that was abolished in 1993) to directly oversees the otherwise *'fractured'* energy management system within China.[305] In 2005, the National Energy Leading Group, led by Premier Wen Jiabao and then Vice Premier Huang Ju and Zeng Peiyan, was formed in order to strengthen and unify energy sector management. However, according to Downs, the National Energy Leading Group was unable to *eradicate its energy governance woes, which were rooted in the structure and power distribution of the energy bureaucracy itself."*[306] In March 2008, the NPC approved the formation of a National Energy Administration (NEA) and a National Energy Commission (NEC) to

298 Zhao, J., p. 9.

299 Magee, D(b)., p. 184.

300 *Ibid.*

301 Xu S. and Chen, W. 2005. *The reform of electricity power sector in the PR of China.* Energy, Environment and Economy Research Institute, Tsinghua University, 21 July 2005, p. 2459. http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6V2W-4GP1VRD-1-H&_cdi=5713&_user=1922471&_orig=search&_coverDate=11%2F30%2F2006&_sk=999659983&view=c&wchp=dGLbVzb-zSkzk&_valck=1&md5=6e0b0cbe21ce62c3a7e8acbf058ab4a9&ie=/sdarticle.pdf (Accessed 17 September 2009).

302 *Ibid,* p. 2461.

303 Magee D., p. 184.

304 People's Daily Online. 2003. *Chinese State Electricity Regulatory Commission Goes into Operation*. http://english.peopledaily.com.cn/200303/26/eng20030326_113984.shtml (Accessed 17 September 2009).

305 Downs, E.S. 2008. *China's "New" Energy Administration: China's National Energy Administration will struggle to manage the energy sector effectively*. China Business Review, November-December 2008, p. 42. http://www.brookings.edu/~/media/Files/rc/articles/2008/11_china_energy_downs/11_china_energy_downs.pdf. (Accessed 18 September 2009).

306 *Ibid.*

oversee China's energy sector. The NEC replaced the functions of the National Energy Leading Group and it also absorbed some energy related authority from various ministries.[307] Similar to the National Energy Leading Group, the NEC is chaired by current Premier Wen Jiabao and aims to unify and lead the energy industry. The NEA is responsible for administrating and implementing the decisions made by the NEC.[308] The NEA's primary responsibilities are to be *"formulating and implementing energy development plans and industrial policies; promoting institutional reform in the energy sector…"*[309] To achieve this, the NEA amalgamates the energy administrations formerly responsible for coal, oil, natural gas, nuclear and thermal power into one administration. Additionally the NEA administers 'renewable energy' which refers to solar power, wind power and hydropower. The NEA has aimed to increase hydropower use in the proportion of China's total energy production.[310] The NEC reports to the State Council, while the NEA is subordinate to the NDRC.

Despite overarching national level decision-making in the energy-sector, there are claims that local level administration has remained dominant in the decision-making. Cunningham reports that in 2005, government sources estimated that there was approximately 120,000 MW of capacity being installed that had not received official approval from Beijing, and was therefore illegal.[311] This further highlights the difficulties of accurately monitoring the energy sector in the country. The proportion of hydropower's capacity in that 120,000 MW was not mentioned. Though the capacity of unapproved energy facilities is significant, the NDRC is the current and highest decision-making authority on approving major hydropower projects. Throughout the evolution of energy sector administration in China, the central government, via regulatory bodies like the NDRC, has been able to maintain control of the energy sector, whilst removing and implementing institutional machinery so as to ensure controlled and sustainable economic growth.

6.5 Hydroelectric Damming along the Lancang-Mekong River

In the context of climate change and China's goal of sustainable development (found in 9th Five Year Plan 1996-2000 and subsequent plans), hydropower is an appealing energy source for decision-making authorities. In 2008 there were approximately 1.78 million people in 427,000 households that were without electricity in Yunnan Province of China's Western region.[312] The capital of Yunnan Province is Kunming with a population of approximately 6.8 million people. Several of the world's great rivers run large lengths of their course through Yunnan and are currently being dammed for hydroelectric purposes. Rivers in Yunnan that are particularly prominent include those that constitute the UNESCO World Heritage listed 'Three Parallel Rivers'[313] (see Figure 4), which are the Mekong (Lancang), Salween (Nu) and the Jinsha (which later becomes the Yangtze). These rivers have been earmarked for large dam

307 China Briefing. 2008. *NPC: National Energy Commission formed as ministerial level regulatory body*. China Briefing, 11 March 2008. http://www.china-briefing.com/news/2008/03/11/npc-national-energy-commission-formed-as-ministerial-level-regulatory-body.html (Accessed 18 September 2009).

308 Zhao, J. 2008. *Energy Office Upgraded, But Power Limited*. Caijing Magazine, 12 March 2008. http://english.caijing.com.cn/2008-03-12/100052084.html (Accessed 18 September 2009).

309 National Development and Reform Commission (NDRC). 2008. *National Energy Administration (NEA)* http://en.ndrc.gov.cn/mfod/t20081218_252224.htm (Accessed 6 September 2009).

310 Gao, S. 2009. *China's Presentation on Recent Development in Energy Sector*. Energy Research Institute, NDRC PRC, Presented in Bangkok, Thailand, March 18-19, p. 8. http://www.adb.org/Documents/Events/Mekong/Proceedings/SEFspecial-annex6.2.pdf (Accessed 18 September 2009).

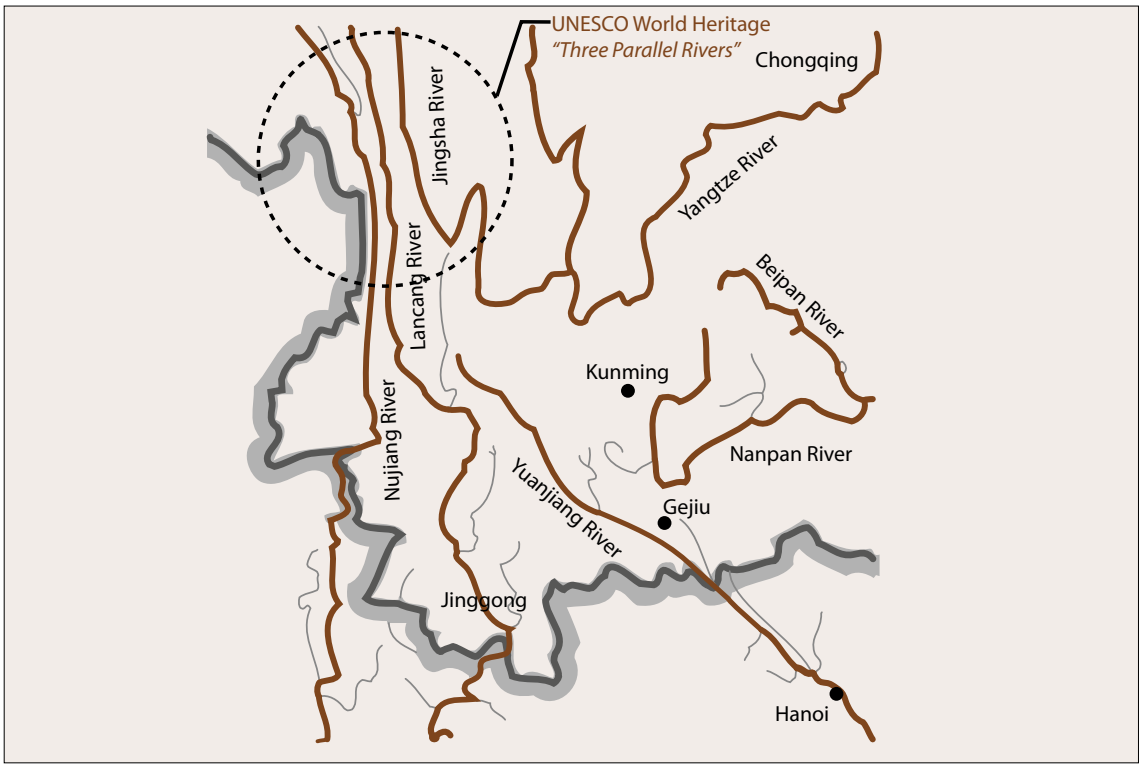
311 Cunningham, E.A. 2008. *Chinese Power: Reforum and Development in China's Electricity Industry in China and East Asian Energy: Prospects and Issues*. Volume II Part II, Australian National University Australia-Japan Research Centre, Asia Pacific Economic Papers, No. 369, 2008, p. 81. http://www.eaber.org/intranet/publish/get_content.php?pid=1026&name=China%20and%20East%20Asian%20Energy%20-%20v2.2.pdf (Accessed 18 September 2009).

312 Anonymous. 2008. *200,000 more rural people get access to electricity in southwest China*. Xinhua News Agency, 5 January 2008. http://www.china.org.cn/english/China/238167.htm (Accessed 18 September 2009).

313 World Heritage List. Three Parallel Rivers of Yunnan Protected Areas, Ref 1083 http://whc.unesco.org/en/list/1083. (Accessed 20 September 2009).

cascades to mitigate China's (and for some dams – the region's) ever-expanding energy requirements. At the time of the WCD's publication, China was building 280 large dams.[314] There are 8 large dams that are to constitute a cascade along the Lancang. While there are major hydroelectric cascades proposed for the Nu and Jinsha rivers, the dam cascade being constructed along the Lancang has drawn great attention due to its level of completion and consequent local and international implications.

Figure 4: Map of the Lancang Cascade



Source: Modified from WCD Impact of Dam Construction on Water Quality and Water Self-Purification Capacity of the Lancang River, China[315]

Furthermore, the damming of the Lancang could adversely impact on the UNESCO World Heritage protected area 'Three Parallel Rivers of Yunnan Protected Areas (China) (N 1083).' The 32nd session of the World Heritage Committee's decision praised the State Party (meaning the CCP) for having a comprehensive river basin management plan and consulting stakeholders on the modifications of property boundaries. It encouraged the State Party to *"extend this consultation with stakeholders, particularly the local communities, on its plans for dam building in the region"*[316] The World Heritage Committee also requested more information with regards to the Environmental Impact Assessments for Comprehensive River Basin Planning and Special Hydroelectric Dam Planning for the Lancang.[317]

The Lancang-Mekong begins in the Tanggula Mountain Range that straddles the provinces of Qinghai and Xizang Zizhiqu (Tibet) at an altitude of over 5,000 m and proceeds to flow through Yunnan. After leaving Yunnan, the Lancang becomes the Mekong and passes through Myanmar, Lao PDR, Thailand, Cambodia and Viet Nam before emptying into the South China Sea. The size of the river basin is

314 The Report of the World Commission on Dams, p. 10.

315 Wei, G. et al. *Impact of Dam Construction on Water Quality and Water Self-Purification Capacity of the Lancang River, China*. Water Resource Management No.23, Springer Science, 2009, p. 1766.

316 WHC-08/32.COM/24. *Decisions Adopted at the 32nd Session of the World Heritage Committee.* Thirty-second session, Quebec City, Canada 2-10 July, 2008, p. 49. http://whc.unesco.org/document/100946 (Accessed 20 September 2009).

317 *Ibid,* p. 50.

approximately 795,000 km^2 and its length is over 4,800 km. Over 60 million people live in the Lancang-Mekong river basin. Around 85 per cent of people living within the river basin work in the agricultural sector. Enough rice to feed approximately 300 million people is produced in the river basin. The river also supports a fisheries industry that produces approximately 1.5 million tons of fish per year. Furthermore, the Lancang-Mekong has abundant biodiversity within its ecosystem and is the habitat for a number of endangered species. The Lancang-Mekong's average discharge into the South China Sea is around 15,000 m^3 per second which makes it the 10th most powerful river in the world.[318]

The length of the river that flows through China, while not as powerful as the lower-reaches of the Mekong, is still a significant water-course. The Lancang section of the river runs for over 2,000 km.[319] The Mekong River Commission (MRC) estimates that 16 per cent of the downstream Mekong flow originates along the Lancang.[320] Despite contributing 16 per cent of the flow, the Lancang contributes 50 per cent of the sediment discharge into the South China Sea at the Mekong Delta in Viet Nam.

The riparian areas along the Lancang are populated by around 5 million people. There is a diverse array of ethnic groups that constitute that population. They include the Bulang, Han, Hanni, Hmong, Hui, Jinuo, Thai, Yao, Yi, Wa and the Zhuang. The surrounding forest has over 5000 plant species which are the habitat for over 400 types of animals. In 1999, China launched a 20-year reforestation project aimed to increase the forest cover along the Lancang from 38 per cent to 50 per cent.[321]

The Lancang-Mekong River has been considered an important potential source of energy for some time. In the early 1950s the United Nations Economic Commission for Asia and the Far East (UNECAFE) perceived the Mekong to be a great source of energy for regional development.[322] The 2007 United Nations Environment Programme (UNEP) Dams Development Project report on 'relevant practices for improved decision-making, planning and management of dams and their alternatives' describes the hydroelectric, agricultural and flood control potential of the Mekong as '*immense*.'[323] Yu and Dore say that Yunnan Province supplied 10 per cent of total national hydropower production in 2004. This proportion of hydroelectric energy from Yunnan Province could be increased to 20 per cent if the available flow was fully exploited.[324] As the Lancang has, thus far, the most major hydroelectric dams already completed out of the 'Three Parallel Rivers', a significant proportion of that 10 per cent would come from the dams that already constitute the Lancang Hydroelectric Cascade. The completed dams along the Lancang are the Manwan dam (operational in 1993), the Dachaoshan dam (operational in 2001) and just recently the Jinghong dam was completed in June 2009.[325] The dams under construction currently are the Xiaowan and Nuzhoudu dams which began construction in 2002 and 2006 respectively. The Xiaowan

318 Dai, A. and Trenberth, K. 2002. *Estimates of Freshwater Discharge from Continents: Latitudinal and Seasonal Variations*. National Center for Atmospheric Research, 12 July 2002, p. 664. http://www.cgd.ucar.edu/cas/adai/papers/runoff-paper1.pdf (Accessed 20 September 2009)

319 Dore, J. and Yu, X. 2009. *Yunnan Hydropower Expansion: Update on China's energy industry reforms & the Nu, Lancang & Jinsha hydropower dams*. Working Paper, Chiang Mai University's Unit for Social & Environmental Research & Green Watershed, Kunming, PR of China, p. 19. http://www.sea-user.org/download_pubdoc.php?doc=2586 (Accessed 19 September 2009).

320 Daming, H. and Lihui, C. 2002. *The Impact of Hydropower Cascade Development in the Lancang-Mekong Basin, Yunnan*. Mekong Update & Dialogue, Volume 5, Number 3, July-September 2002, p. 2. Australian Mekong Resource Centre http://www.mekong.es.usyd.edu.au/publications/mekong_updates/update5.3.pdf (Accessed 19 September 2009).

321 Anonymous. 2002. *Xiaowan Dam, A Reservoir for Progress*. China Daily, 16 September 2002. http://www.china.org.cn/english/environment/42990.htm (Accessed 21 September 2009).

322 Pochat, V. 2007. *International Policy in Shared River Basins*. Dams and Development: Relevant Practices for Improved Decision Making. United Nations Environment Programme Dams and Development Project, 2007, p. 84 http://www.unep.org/dams/files/Compendium/Report_InterRivers.pdf (Accessed 21 September 2009).

323 *Ibid,* p. 86.

324 Dore, J. and Yu, X., p. 10.

325 China Electricity Council (Original article in Chinese and translated by Kevin Yuk-shing Li for China-Mekong Google Group). 2009. *Jinghong hydropower station fully completed.* 3 June 2009. http://finance.ifeng.com/roll/20090603/737536.shtml (Accessed 21 September 2009).

dam, while still under construction, recently began generating electricity in September 2009.[326] The Gongguoqiao, Mengsong and Ganlaba dams have been designed, but their construction is yet to begin (see Figure 5).

As a result of the energy administration reforms (noted in section 6.4.4 of this report), rights to build the remaining dams and operate all of the constructed dams along the Lancang have been given to China Huaneng Group. China Huaneng Group formed a subsidiary company called 'Yunnan Huaneng Lancang River Hydroelectric Company' (Hydrolancang) which is responsible for the construction and operation.

The energy capacity potential of the Lancang River is 25500 MW and of that the exploitable capacity is estimated to be 23480 MW. With regards to the WDS, according to Dore, Yunnan Province is to transfer 8 GW of electricity to Guangdong Province per annum by 2015. Energy exports from the Western regions to the Eastern regions are expected to quadruple between 2000 and 2020.[327] The total generating capacity of the Lancang Cascade under construction is estimated to be 15.95 GW when all dams are complete and functioning (see Table 2). By 2015, the completed dams (Manwan, Dachaoshan, Jinghong and Xiaowan) will potentially be capable of generating 8.85 GW of electricity. Consequently, it is reasonable to speculate that a significant proportion of the proposed 8 GW transfer to Guangdong will come from energy derived along the Lancang.

There are many local and international issues raised by the Lancang hydroelectric cascade construction. Locally, the issues brought about by the cascade concern people within the vicinity of the dam participating in the decision-making process, the resulting human resettlement, impoverishment and compensation, damage to the natural environment, loss of water quality and the degradation of ecosystems. The international issues that arise concern the benefits for climate change and pollution mitigation in China, control of flow regulation for downstream countries and the subsequent ecological impacts that regulation will bring. All of these issues relate to state sovereignty and its limits, the precautionary principle and sustainable development, which are outlined in Chapter 1 of this report.

These issues will be addressed in the following sections. Firstly, to examine the local impacts, the Manwan hydropower project will be discussed. Secondly, pre-construction social impact reviews of the Dachaoshan hydropower project will be examined. These dams were constructed throughout both centrally planned and market oriented reform periods of China's energy administration evolution (which are outlined above in Section 6.4 of this case study). Information on the Hydrolancang dams that are completed or nearly completed (Jinghong and Xiaowan) have less available information for public analysis compared to long since completed Manwan and Dachaoshan hydropower projects.

Table 2: Capacity of Dams in the Lancang Cascade

Dam	Construction company	Status	Size (Reservoir ha/ Wall height)	Displaced persons (Official)	Installed capacity	Cost Est (US$M)
Manwan	YMEPGC	Completed 1996	415ha/126m	3,513	1550MW	473
Dachaoshan	DHPC	Completed 2003	826ha/111m	6,054	1350MW	600
Jinghong	N/A	Completed 2009	510ha/118m	2,264	1750MW	1,000
Xiaowan	Hydrolancang	Completion 2012	3712ha/292m	32,737	4200MW	4,000
Nuozhadu	Hydrolancang	Completion 2017	4508ha/254m	23,826	5500MW	5,000
Gongguoqiao	Hydrolancang	Under Construction	343ha/105m	4,596	750MW	625
Mengsong	Hydrolancang	Designed	58ha/N.A	230	600MW	N/A
Ganlanba	Hydrolancang	Designed	12ha/N.A	58	250MW	N/A

Source: Compiled from various information.[328]

326 Li, Y. and Anfei, G. 2009. *Xiaowan dam generating electricity in Kunming*. China Daily, 25 September, 2009. http://www.chinadaily.com.cn/regional/2009-09/25/content_8738659.htm (Accessed 26 September 2009).

327 Dore, J. and Yu, X., p.12.

328 Magee, D(a). Dore, J. and Yu, X. and Probe International. 2009. *The Hydrolancang Cascade: Fact Box*. http://www.probeinternational.org/three-gorges-probe/hydrolancang-cascade-fact-box (Accessed 25 September 2009).

Figure 5: Dams in the Lancang Cascade

Source: The Impact of Hydropower Cascade Development in the Lancang-Mekong Basin[329]

6.6 Impacts of the Lancang Cascade: The Manwan and Dachaoshan Dams

The local issues that have emerged from two (Manwan hydropower project and Dachaoshan hydropower project) of the completed Lancang Cascade hydropower projects will be examined in this section. The issues generated by the hydropower projects revolve around their social impact, the inadequacy of past SIAs, the responsibility of governance and the role of external financial institutions in justifying hydropower projects along the Lancang. English language sources that have previously examined local issues are not readily available. The primary ethical aspect that is considered in this section is the principle of state sovereignty.

6.6.1 Manwan Dam

In 1985 construction of the Manwan hydropower project on the Lancang River began. Manwan Dam is located 233 km West of Yunnan Province's capital Kunming. In 1993 the construction of the Manwan hydropower project was completed and it began operation. By 1996, Manwan hydropower project had begun fulfilling its potential generating capacity. According to Yu and Jia *"The People's Government of Yunnan Province made great efforts to get early approval of Manwan Hydropower Station … by* [the] *National Authorities."*[330] As mentioned in Section 6.4.4 of this report, this was at the time of energy related ministries being disbanded in favour of corporations. According to Magee, the arrangement that

329 Daming, H. and Lihui, C., p. 2.

330 Yu, Xand Jia, J. 2002. *An Overview of Participatory Social Impact Assessment for Manwan Hydropower Station in Lancang River*. Green Watershed, 2002, p. 17. http://www.internationalrivers.org/files/Manwan.pdf (Accessed 16 September 2009) .

financed the project became known as 'the Manwan Model'[331] The Manwan hydropower project was jointly funded by the Yunnan Provincial Government and the Ministry of Water Resources and Electric Power. At the time it was seen as an innovative way of sourcing funds for projects.

With regards to the previously discussed energy sector reforms, in 1998 Manwan hydropower project's ownership was redistributed between 'Yunnan Electric Power Group Company' (YEPG) (now known as Yunnan Power Grid Corporation – a subsidiary of China Southern Power Grid)[332] which held shares amounting to 56 per cent. The remaining 44 per cent of the shares were attributed to 'Yunnan Province Development Investment Company' (YDIC) (a subsidiary of the State Development Investment Company). These two companies formed the 'Yunnan Manwan Electric Power Generation Company' (YMEPGC) in 2002. The YMEPGC was made up of "*…investments from State Power Corporation (27%), Yunnan Electric Power Group Company (29%, now Yunnan Electric Power Grid Company), Yunnan Province Development Investment Company (24%) and Yunnan Hongta Group (20%).*"[333] The investment in the YMEPGC reflects state-control of energy-sector development. That YEPG, (whose investment was from the central government) and the YDIC, (an investment arm of the central government's SDIC) were the two shareholders in the Yunnan Manwan Electric Power Generation Company emphasizes the decision-making authority the central government in Beijing has over hydropower development. This decision-making authority of China's central government in Beijing is vested in the principle of State Sovereignty outlined in Section 1.2 of this report.

As mentioned in Section 6.5, Hydrolancang now owns and operates all of existing and future dams that will constitute the Lancang Cascade. Magee observes that: *"Hydrolancang results from a merger and reorganization of the former Yunnan Lancang River Hydropower Development Company* (YLRHDC)*, established in 2002, and Yunnan Manwan Power Generation Company."*[334] After energy-sector reform, the current shareholders of Hydrolancang are China Huaneng Group which has a 56 per cent stake, YDIC has control of 31.4 per cent and Yunnan Hongta Investment has 12.6 per cent.[335]

Despite the ownership of Hydrolancang being divided between shareholders to avoid competition, the central government of China remains the decision-making authority because of its investment in the shareholding businesses. Both China Huaneng Group and Yunnan Hongta Investment are 100 per cent state-owned companies,[336] while the YDIC is a provincial extension of the sovereign-wealth fund: the SDIC. Consequently it is fair to say that the central government has been and continues to be able to exercise the principle of state sovereignty with regards to the operation and construction of the Lancang Cascade. Despite the continued separation of business and administration, decision-making that affects the nation in China is largely the responsibility of the central government. This reflects the principle of state sovereignty outlined in Section 1.2.

6.6.2 The Green Watershed Manwan Dam Post-Social Impact Assessment

In 2002, a NGO group called Green Watershed led by Dr. Yu Xiaogang published a detailed post-Social Impact Assessment (SIA) on the Manwan reservoir.[337] By making a SIA, Yu Xiaogang hoped to provide a useful reference for the future development of hydroelectric dams.[338] Former Premier Zhu Rongji was made aware of the Green Watershed Manwan Dam SIA after its publication and he subsequently ordered

331 Magee, D(b). p. 183-4.

332 Yunnan Government Portal. 2009. *Yunnan Power Grid Corporation*. http://www.eng.yn.gov.cn/yunnanEnglish/14664846286625177 6/20050702/435198.html (Accessed 20 September 2009).

333 Magee, D(b). p. 185.

334 *Ibid.*

335 Hongta Group. 2009. *Yunnan Huaneng Lantsang Hydraulic Power Company, Ltd*. http://www.hongta.com/model_ht_en/MixedInvestment/Res_Tra.jsp?ID=130500000000000000,2 (Accessed 25 September 2009).

336 *Ibid.*

337 This case study references a version of the report translated into English.

338 Yu, X . and Jia, J., p. 3.

that the issues it raised be addressed as soon as possible.[339] Consequently, the case study resulted in the Yunnan Provincial Government providing 70 million yuan (then US$ 8.7m) in additional compensation to be distributed to the affected peoples of the Manwan reservoir.[340]

A SIA is a study of the social impacts of a major project *before* construction commences. 'Social impact' refers to the *"consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society."*[341] The post-construction SIA made by Yu Xiaogang and Green Watershed highlighted the gap there has been historically between original policy and the outcome for affected peoples.

According to Yu Xiaogang and Jia Jiguo, the inadequate SIA of dams in the past would often mean that the needs and interests of resettled populations could be ignored. This is also the position reached in the WCD. Yu and Jia state that*"Local Governments found no ways, nor sufficient fund*[s] *to help because initially the impact was underestimated and the funds allocated* [for] *resettlement* [fell] *short of the needs."*[342] Subsequently, over time, the accumulation of problems meant that conflict between local government and the affected people within the vicinity of the Manwan reservoir occurred often.

6.6.3 The Five Villages of the Green Watershed Manwan Dam Post-Social Impact Assessment

The Green Watershed Manwan SIA examined five villages all of which had experienced different impacts. The selection of villages through how they were affected represented a broad array of the many villages affected by the Manwan reservoir. The villages in the study were: 'Hongyan and Anyuan Villages of Xinfu Township, 'Jiangbian Natural Village' of Jingdong County, 'Tianba Village' of Manwan Town, 'Malutian Natural Village' of Manwan Town and 'Pingzhang Natural Village' of Manwan Town. The SIA of each town was conducted over a 4-5 day period by making assessments in which villagers were freely able to participate.[343] The research focused on economic issues, gender issues, issues of social participation, the socio-cultural impact and on changes to the ecological environment.

The Hongyan and Anyuan Villages assessment in the Green Watershed SIA on Manwan dam focused on peoples resettled on land that was remote from their historical location. The new location for the people of the Hongyan and Anyuan Villages had better facilities (i.e. access to markets, transportation, educational resources and medical care.) Furthermore, agricultural management was more taken into consideration so farmers were able to make more money from sugar cane crops. However, Yu and Jia report that residents struggled to adapt to their new surroundings with costs increasing with their new lifestyles. Also residents' "*social capital*" weakened which resulted in psychological issues.

The second village discussed in the Green Watershed report was the Jiangbian Natural Village. The assessment analyzed persons who had been resettled more locally behind the reservoir at an already established village. People from Jiangbian were resettled at a pre-established town called Bingzai. In contrast to the Hongyan and Anyuan villages' assessment, the residents of Jiangbian did not suffer adaptation issues associated with livelihood loss. However, new residents from Jiangbian encroaching on the land traditionally owned by the people of Bingzai fostered communal tension. People originally from Jiangbian were economically disadvantaged as a result due to restrictions on natural resources. Consequently people had to borrow money and in some cases children were unable to attend school. Yu and Jia report that the gap between rich and poor became greater. Amongst poorer families, gender

339 Anonymous. 2006. Environmentalist protects threatened watersheds. China Daily, 25 April 2006. http://english.peopledaily.com.cn/200604/25/eng20060425_260982.html (Accessed 17 September 2009).

340 *Ibid.*

341 US principles and guidelines. 2003. *Principles and guidelines for social impact assessment in the USA*. Impact Assessment and Project Appraisal, Volume 21 Number 3, September 2003, p. 231. http://www.iaia.org/publicdocuments/Pubs_Ref_Material/US-principles-final-IAPA-version.pdf (Accessed 18 September 2009).

342 Yu, X. and Jia, J. p. 2.

343 *Ibid,* p. 6.

equality in relation to women worsened. Yu and Jia conclude that a long time will pass before the people of Jiangbian regain a standard of living similar to which they had in their original village.

Thirdly, the Tianba Village was symbolic of people from villages whose livelihoods were agriculturally based but were altered to be non-agricultural. Yu and Jia report that there was *"no clear resettlement policy towards this village."*[344] It was not till 1988 (3 years after the construction of Manwan hydropower project began) that the traditional farmers of Tianba were given compensation for their land and an alternative livelihood structure. This alternative livelihood structure was to form a grain trading company. The grain was to be supplied by the government. Yu and Jia report that the resettled people of Tianba *"who had long been used to [engaging] in traditional farming activities … were not seasoned with running secondary … industries and failed to run their development company."*[345] As a result of this failure, many of the original Tianba townspeople became unemployed and suffered from mental illness. Yu and Jia state that out of the five villages examined the people of Tianba village had the most problems.[346]

The fourth group of people assessed were from Malutian Village who are representatives of villages that decided to stay in their original location, but had their arable land reallocated. Yu and Jia reported that their reallocated land was too small. As a result, people from Malutian Village were worse off economically because they were not able to harvest as much as they normally could have prior to the reservoir inundating their original land. This reduction in economic performance triggered a cascade of issues for the people of Malutian Village. Problems Yu and Jia noted were that children were unable to attend middle-school, the town's water had become polluted and people could not afford medical care. Yu and Jia observe that despite government efforts to improve accessibility to resources for Malutian Village (such as: building a road between towns and improving education infrastructure), compensation had still (in 2002) not been made for the land and facilities that had been inundated by the Manwan reservoir. Because of these issues there was still tension between the government and people from Malutian Village.

The final village assessed was Pingzhang. Pingzhang Village represented villagers that chose to stay in their original location and chose not to have reallocated land. Like all the other assessed villages in the Green Watershed report, before Manwan hydropower project's construction, Pingzhang was said to have a fantastic natural environment. Furthermore, Pingzhang Village was said to be 'well-to-do' with regards to its socio-economic state (refer to the end of Section 6.4.1 regarding the promotion of a 'well-to-do' society in the Western developing regions.) The government attempted to reclaim land nearby Pingzhang Village so its affected people could continue to farm. However, the land reclaimed was of poor quality and the affected people refused to accept the offer. Most villagers lost their livelihoods. To survive, *"young villagers have to go out to work to earn* [a] *living, but are often exploited by … contractors and… traffickers."*[347] There were cases of women and children being abducted and sold. As a result of the village's overall poverty, members of the CCP were overstretched with complaints and consequently, community management was weakened. Yu and Jia conclude that despite the government's good intentions of providing land, the lack of participation in the decision-making process by the affected villagers of Pingzhang, resettlement work was *"carried out passively."*[348]

6.6.4 General Assessment of the Green Watershed Manwan Dam Social Impact Assessment

By analyzing the socio-economic issues in the five villages as well as considering the initial policy and the results of the construction of Manwan hydropower project, Yu Xiaogang and Jia Jiguo were able to make a general assessment on the social impact. In terms of the economic issues, Yu and Jia comment that the benefits of Manwan hydropower project to Yunnan Province and China are undoubted, but the negative socio-economic impacts on those living around the dam should not be neglected.

344 Yu, X., and Jia, J., p. 13.

345 *Ibid.*

346 *Ibid,* p. 14.

347 *Ibid,* p. 16.

348 *Ibid.*

Yu and Jia state that the number of displaced was actually 7,260 persons which is at least double the planned-for figure (the Green Watershed report says 3,052 were officially displaced, whereas other tables state a figure of 3,513 – see Table 2). The expenditure on land compensation reached 55 million Yuan (before the Green Watershed report was released) which is triple the 17.6 million Yuan originally estimated for resettlement.[349] Yu and Jia comment that despite the expenditure for resettlement being several times higher than was originally estimated, each person affected by displacement was entitled to 8,000 Yuan which was far short of the amount that was required. In addition to the 8,000 Yuan entitlement, a 'follow-up development assistance fund' for affected people was established which was a contribution from the 'electricity revenue tariff' of either 400 Yuan per person in a bulk payment or 0.005 Yuan per kilowatt hour of electricity generated. Yu and Jia state that this compensation was minimal. Moreover, displaced people from the five villages had less access to natural resources, and their livelihoods became more risky and restricted which resulted in a decreased living standard. A decrease in living standard for citizens was contrary to the 9th goal of the 7th Five-Year Plan (1986-1990), which was *"To improve the material and cultural life of all Chinese."*[350]

In relation to issues concerning gender equality, women's development was hindered. A schism developed further between men and women in relation to their development and capacity-building opportunities as *"men went out to seek development opportunities and women stayed at home to do all the farming and house care activities."*[351] However, it is not possible to gather from the Green Watershed report whether involvement of local women in the decision-making process was fair and representative.

However, livelihoods were arguably able to improve as a result of the Manwan Hydropower project. With improved access to transport, medical care, education and market related infrastructure, previously closed-off villages were given the potential to develop and integrate into mainstream culture at a greater pace than would have been otherwise possible had the Manwan hydropower project not been constructed. All villages had a constant supply of electricity because of the hydropower project. However, access to these resources became difficult for resettled persons because often they became marginalized in already established towns due to economic issues resulting from relocation previously discussed and weakening social relations due to traditional values being eroded. In terms of the preservation of ethnic culture, *"indigenous knowledge became weak or even disappeared."*[352] Furthermore, the ecological resources traditionally depended on by local people were degraded as a result of the hydropower project's construction. Yu and Jia comment that *"soil erosion, land collapse, mud and rock flow, and landslide exacerbated water pollution"*, this in turn led to fish-borne diseases for villagers and livestock.

While making a commendable analysis of the social impact on the affected villages within the vicinity of Manwan hydropower project's reservoir, the Green Watershed report does not reference the population living in Kunming who would be negatively affected by poor air quality if more coal-fired plants were constructed to fuel metropolitan development. An ADB report states that "*Air pollution levels rank Kunming in the middle among major Southern China cities. It would not be environmentally desirable to meet the growing demand for electricity by constructing additional coal-fired generating capacity in or near Kunming, the provincial capital.*"[353] The resulting social impact of reduced air quality in Kunming could have negatively affected people's livelihoods. Despite acknowledging the *'huge contribution of the Power Plant to the nation'*[354], the global issue of climate change and the positive impact that hydropower on its mitigation was not acknowledged in the report by Yu and Jia. However as is stated at the start of Section 6.6.2, the purpose of the Green Watershed post-SIA was to provide a useful reference for better

349 *Ibid,* p. 17.

350 Central People's Government of the People's Republic of China Portal. 2005. *The 7th Five-Year Plan (1986-1990)* http://www.gov.cn/english/2006-04/05/content_245695.htm (Accessed 17 September 2009).

351 Yu, X. and Jia, J., p. 19.

352 *Ibid,* p. 20.

353 The Asian Development Bank. 1999. Case Study 4, *People's Republic of China: Yunnan Dachaoshan Power Transmission Project* in Environment and Economics and Project Preparation. The Asian Development Bank, 1999, p. 201. http://www.adb.org/Documents/Books/Env_and_Eco/prc3.pdf (Accessed 5 October 2009).

354 Yu, X. and Jia, J., p. 18 .

managing the construction of hydroelectric projects in the future. It concluded that affected people need to be much more involved in the participatory process.

The report highlighted with regards to the participatory process that decisions were made from *"top to bottom"* (top referring to national governance, and bottom referring to the people of affected villages.) Yu and Jia state that the *"resettled populations [had] no right to participate in making decisions on the resettlement policies, ways of resettlement, selection of resettlement places, the follow-up support policies…, the selection of support projects and the implementation of the policies or projects."* As the Green Watershed report illuminates through highlighting the extent of the damage caused to local people's livelihoods, these problems were ultimately not deliberated on extensively enough before Manwan hydropower project began construction in 1985.[355] At the time of Manwan hydropower project's construction, China was changing from a centrally planned economy to a market oriented economy.

6.6.5. Dachaoshan Dam

The Lancang dams being constructed after the publication of the Green Watershed Report on Manwan hydropower project do not have publically available SIAs. However, there is information concerning Dachaoshan Dam which has been generating energy since 2001. The Dachaoshan Hydropower Project was the second major dam to be constructed along the Lancang River. When the Dachaoshan hydropower project was formally approved in 1994, the central government was retaking authority from local administrations. However, by 4 August 1997, when construction began[356], the central government had relaxed control on business and was attempting to reintroduce a more market-orientated management approach (see 6.4). Dachaoshan hydropower project began full operation in 2003 and is located 90 km downstream from Manwan hydropower project (see Figure 4). Dachaoshan hydropower project is slightly less powerful than the Manwan Dam, but the reservoir will have almost double the surface area (see Table 2).

Like Manwan Dam, the evolution of ownership and responsibility for Dachaoshan hydropower project is representative of China's energy-sector administrative fluctuation. In 1994, the 'Yunnan Dachaoshan Hydropower Plant Company' (DHPC) was formed by the state to construct and operate the hydropower project. SDIC controlled a 50 per cent share in the company, 'Yunnan Hongta Industrial Company' controlled a 30 per cent share, YDIC and YEPG (which is now Yunnan Electric Power Grid) controlled 10 per cent shares each.[357] All of these companies and investment funds were and are state-owned. Like all other dams that constitute the Lancang Cascade, Dachaoshan hydropower project is now owned and operated by Hydrolancang which, as previously mentioned, is a state-owned company.

The Dachaoshan hydropower project (and the Lancang Cascade) continues part of China's push for clean energy and infrastructure development in Yunnan, which is a goal of the WDS. Infrastructure development (that is now part of WDS policy) such as major transmission lines and rural electrification lines were installed. Furthermore, construction of the Dachaoshan hydropower project resulted in the closure of three inefficient and unclean coal-fired power plants that had a total electricity generating capacity of 282 MW.[358] This reflects China's policy choice of the principle of sustainable development in an overall national context.

355 *Ibid.*, p. 11.

356 Anonymous. 2002. *Xiaowan Dam, A Reservoir for Progress*. China Daily, 16 September 2002. http://www.china.org.cn/english/environment/42990.htm (Accessed 21 September 2009).

357 Hongta Group. *Yunnan Huaneng Lantsang Hydraulic Power Company, Ltd*. http://www.hongta.com/model_ht_en/MixedInvestment/Res_Tra.jsp?ID=130500000000000000,1 (Accessed 25 September 2009).

358 The Asian Development Bank. 1999. Appendix 6, *Summary Environmental Impact Assessment of the Yunnan Dachaoshan Power Transmission Project in the People's Republic of China*. 'Environment and Economics and Project Preparation. The Asian Development Bank, 1999, p. 369. http://www.adb.org/Documents/Books/Env_and_Eco/appendix%206.pdf (Accessed 6 October 2009).

6.6.6 Dachaoshan Dam and the Asian Development Bank

The hydropower projects that constitute the Lancang Cascade are almost entirely funded by state-owned companies. However, the ADB was required to part fund transmission lines from the Dachaoshan hydropower project to Kunming and rural areas in Yunnan. Issues of land resettlement and acquisition from Dachaoshan Dam were addressed in a plan made by the Beijing Hydropower Investigation and Design Unit. This plan was summarized in a report made by the Asian Development Bank (ADB). According to an ADB case study on the Dachaoshan hydropower project in the 1999 report 'Environment and Economics in Project Preparation': *"The Dachaoshan hydropower plant is a run-off river station requiring minimal reservoir capacity. The resulting inundation is minimal and other ecological impacts are insignificant. No drastic change in the immediate ecology is expected. Resettlement will take place in 2000 before inundation in 2001."*[359] The 'minimal reservoir capacity' is stated to be minimal in the case study due to the comparative annual flow of the Lancang.[360]

The ADB case study states that the Dachaoshan hydropower project was projected to 'affect 38 administrative villages', 5,005 people were to have their arable land inundated by the reservoir and 440 were projected to have issues with 'slope instability.'[361] The ADB financed a third of the transmission lines which cost in total US$ 315.8 million from Dachaoshan hydropower project to Kunming and to rural areas in Yunnan.[362] As a result of the transmission lines sponsored in part by the ADB, 212 people were to lose farmland and 657 people were to lose their homes. The sum of 6,314 displaced persons from the ADB case study does not correspond to the number of 6,054 persons displaced which is listed in Figure 3.

There is contradiction between ADB reports regarding which administrative body was to be primarily responsible for the resettlement process. The ADB case study in the 'Environment and Economics in Project Preparation' report states that the Yunnan Provincial Resettlement Office (YPRO) working in conjunction with the affected administrations of prefectures, townships and villages was responsible for the resettlement of affected persons. Whereas the ADB's 'Yunnan Dachaoshan Power Transmission Project' report from 1998 in the 'Summary of Land Acquisition and Resettlement Plan' section states that the YEPG was to take responsibility.[363] That there is conflating information between the reports further highlights the ambiguity of the decision-making process with regards to the rights of governments deciding for their citizens.

The ADB case study refers to a new 'Resettlement Action Plan' (RPA) that was produced in 1993 that made improvements to the compensation and resettlement process *'considerable.'*[364] While unable to make a comparison with the RPA or SIA of Manwan Dam so as to see the evolution of policy, it is possible to gather perspective from the ADB case study on the issues that remained evident in 1994 as Manwan hydropower project neared completion and Dachaoshan began construction. Consistent with the issues raised by Yu and Jia in the Green Watershed post-SIA, the ADB case study reports that there were *"…problems related to the notification of project-affected people concerning precisely how they will be affected by the project, and the lack of detailed household surveys."* Furthermore, the case study notes that there was *"…contradictory information concerning ethnic minority groups."* Another ADB summary states that 58 per cent of the population affected are of ethnic minority status.[365] The ADB required that its own policy on Indigenous Peoples was met.[366]

359 *Ibid,* p. 370.

360 *Ibid,* p. 381.

361 *Ibid,* p. 382.

362 Case Study 4, p. 204.

363 Land Acquisition and Resettlement Plan. 1998. *Yunnan Dachaoshan Power Transmission Project in the People's Republic of China.* Environment and Economics and Project Preparation. The Asian Development Bank, 1998, p.58. http://www.adb.org/Documents/IndigenousPeoples/prc/slarp-rrp-R18598-PRC.pdf (Accessed 5 October 2009).

364 *Ibid.*

365 *Ibid.*

366 *Ibid.* Appendix 6, p. 383.

The ADB commissioned a SIA survey of residents in the area proposed for inundation by Dachaoshan Dam which *"covered more than 20 per cent of people affected."* [367] At the time of Dachaoshan Dam's construction, The DHPC and the YPRO reportedly agreed to involve more residents in the participatory process and consult with ethnic minority groups.

Moreover, the DHPC and YPRO agreed to provide new housing and closely monitor their condition.[368] Similar to the Manwan Dam's 'follow-up development assistance fund', a 'Reservoir Post-construction Support Fund' was established by the DHPC and 'resettlement offices' which were to provide 0.003 Yuan per Kw hour. This is 0.002 Yuan per Kw hour less than the affected persons of Manwan hydropower project were reportedly able to receive. Furthermore, no bulk payment option for post-displacement issues for the displaced residents of Dachaoshan was mentioned in the ADB report.

The ADB, an international monetary organization largely endorsed the decisions of the representative authorities of state-owned companies and provincial administrations regarding resettlement plans brought about by the Dachaoshan Dam. The ADB case study on Dachaoshan Dam states that despite the importance of resettlement issues, they were not significant enough *"to place in question the overall integrity of the proposed compensation and resettlement process."*[369] The involvement of the ADB in funding transmission lines and in making additional SIAs highlights the importance of international financial institutions in the national decision-making process on selecting energy technologies.

However, in the case of the Lancang Cascade, it is important to reiterate that the ADB financed only a third of the power transmission lines from Dachaoshan Dam. The majority of the funding for the Dachaoshan Hydropower Project came from provincial administrations and state-owned companies that were approved by the central government whose direction ultimately comes from the Standing Committee of the Politburo.

6.6.7 Investment by Thailand in the Lancang Cascade

The decision-making process for the Lancang Cascade is shared regionally. The Jinghong hydropower project (see Figure 5) was earmarked for exporting part of its generated energy to Thailand. In 1994, MDX Power, a Thai company, began preparing feasibility studies with the Yunnan Electric Power Corp. for the construction of the Jinghong hydropower project.[370] Power from the Jinghong hydropower project was to be transmitted through Lao PDR. Later MDX was replaced by the Electricity Generating Authority of Thailand (EGAT) as the source of Thai investment for the Jinghong hydropower project. However, this funding from EGAT did not materialize due to "*a speedier timeline* [for construction] *than the original … and the economic slow down in Thailand.*"[371] The Nuzhudou hydropower project scheduled for completion in 2017 will, however, have Thai investment from EGAT. According to Magee, *"a three-way division of the 5,500 MW of Nuozhadu's generating capacity: 3,000 MW for Guangdong, 1,500 MW for Thailand, and 1,000 MW for Yunnan"* has been agreed.[372] This arrangement is evidence that the decision-making process for the Lancang Cascade involves other nation-states as well as the central government of China.

367 *Ibid.* p. 58.

368 *Ibid.*

369 Appendix 6, p. 382.

370 Changsorn, p. 1994. *MDX Signs Joint-Venture for Chinese Power Project*. The Nation, Friday November 11, 1994.

371 Mehtonen, K. 2008. *Do the downstream countries oppose the upstream dams?* in Kummu M., Keskinen, M. and Varis, O. (eds). Modern Myths of the Mekong. Water & Development Publications, Helsinki University of Technology, 2008, p. 165. http://www.water.tkk.fi/English/wr/research/global/myth/13_Mehtonen_Myths-of-Mekong.pdf (Accessed 15 September 2009).

372 Magee, D(b)., p. 184.

Figure 6: Map of the Lancang-Mekong River Basin

Source: The World Wildlife Fund – 10 Rivers at Risk.[373]

6.7 International Implications of the Lancang Cascade

6.7.1 The Relationship to the Mekong River Commission (MRC)

The international issues that have arisen from the Lancang Cascade are concentrated on the asymmetrical relationship that China has with the downstream Mekong River Commission (MRC – Thailand, Lao PDR, Cambodia and Viet Nam) states. For instance, activist Yu Xiaogang says that *"these Chinese dams will destroy the river's ecosystem. They will also give China control over water levels and the Mekong will no longer be useful for any purpose other than electricity generation."*[374] However, evaluations by the Chinese Academy of Engineering report that the Lancang Cascade will only have a limited effect on the lower reaches of the Mekong.[375] There are a significant number of NGOs and English-language media reports[376] that criticize China for acting unilaterally along the Lancang-Mekong without practical consultation and dialogue with downstream nations. This reported lack of dialogue could ultimately lead to the negative consequences of flooding, erosion, preventing fish migration and diminished agricultural production.

373 *Mekong-Lancang*. 10 Rivers at Risk. http://www.panda.org/about_our_earth/about_freshwater/freshwater_problems/river_decline/10_rivers_risk/mekong_lancang/ (Accessed 9 October 2009).

374 Antaseeda, P. 2002. Upstream power play. Perspective, Bangkok Post, 22 December, 2002. http://www.livingriversiam.org/mk/Mek_dam_nE3.htm (Accessed 9 October 2009).

375 Anonymous. 2002. *Xiaowan Dam, A Reservoir for Progress*. China Daily, 16 September 2002. http://www.china.org.cn/english/environment/42990.htm (Accessed 21 September 2009).

376 Mehtonen, K., p.167.

Tyson Roberts states that the *"environmental impacts will not act individually, but cumulatively"* with regard to the deterioration of the Lancang-Mekong ecosystem. The ecosystem includes people whose livelihoods depend on the wellbeing of the river. Therefore, damming the Mekong has a progressive impact upon the entire Lancang-Mekong river basin. The ethical aspects that are considered throughout this section are the limits to the principle of state sovereignty, the precautionary principle and the principle of sustainable development.

Often it is suggested that the impact on downstream countries of the MRC are not deliberated on thoroughly in China's hydroelectric plans along the upper reaches of the Lancang-Mekong in Yunnan. China is not a full member of the MRC, but is instead a 'Dialogue Partner' with Myanmar. Former Cambodian Minister for Transport and Public Works Khy Tang Lim stated that "*they* [China] *are upstream. They are a richer country operating in their own sovereign territory. How can we stop them?" … "We are downstream, so we suffer all the negative consequences. If there is no more water for us, no more fish, no more vegetation, this is a big disaster."* The fear of downstream consequences resulting from the Lancang Cascade was elaborated on by a joint United Nations Environment Programme (UNEP) – Asian Institute of Technology (AIT) water resource assessment entitled 'Freshwater Under Threat: Southeast Asia' which stated that: *"China's ambitious plan to build a massive cascade of dams on the upper part of the Mekong River, as it tumbles through the high gorges of Yunnan Province, may pose a considerable threat to the river. The reservoir behind the third dam in the cascade, the 292 m (958 ft) high Xiaowan Dam, the world's tallest, can store more water than all the Southeast Asian reservoirs combined."*[377]

The ' Southeast Asian reservoirs' referred to in the above quote from the UNEP-AIT report are also being built exponentially just as the hydroelectric cascades are in Yunnan Province. An article in the World Rivers Review entitled "The Mekong: Diverse, Magnificent, Threatened" reported that *"Lao PDR, which contributes about a third of the Mekong's flow, is undergoing a dam building boom…"*, *"Viet Nam is also building dam cascades on several Mekong tributaries, the impacts of which are being experienced by ethnic minorities…"* and *"Cambodia, which is essentially a floodplain, is also hoping to build dams on Mekong tributaries and the mainstream…"*[378] By implicating China as the primary actor in causing negative downstream affects of the Lancang Cascade is short-sighted because as stated in Section 6.5, the MRC estimates that the Lancang portion of the river only contributes to 16 per cent of the downstream flow of the Mekong. Subsequently, equitable river management along the Lancang-Mekong depends on water-sharing agreements between all states concerned. As Tyson Roberts says, the following issues (flood management, fisheries and agricultural) *"will not act individually, but cumulatively"* which consequently result in deleterious social impacts.[379]

6.7.2 Implications for Flooding

However, this is not to say that the MRC states aren't facing threats from the Lancang Cascade. Threats may occur due to Yunnan's monsoon season if too much water is released by the Cascade which could as a consequence contribute to downstream flooding in MRC states. The flood cycle along the Lancang-Mekong is a regular occurrence and is vital for seasonal rice production. Altering the flood cycle through regulation, or unexpectedly releasing water if necessary could cause disarray downstream.

In August 2008, during the monsoon season, the Lancang-Mekong overflowed in Thailand and Lao PDR and as a result villages and farms were flooded. There were accusations from media and NGO Groups that *"water released from the reservoirs of three big Chinese dams on the upper reaches of the Mekong swelled the runoff from a tropical storm and heavy monsoon rain across northern Lao PDR and China's southern*

377 United Nations Environment Programme. 2009. Freshwater under Threat: Southeast Asia., p. 13. http://www.roap.unep.org/publications/SEA_Water_report.pdf (Accessed 9 October 2009).

378 Imhof, A. 2007. The Mekong: Diverse, Magnificent, Threatened. World Rivers Review, International Rivers Network Vol. 22, No. 2, p. 1. http://www.internationalrivers.org/files/WRRjune2007Final.pdf (Accessed 9 October 2009).

379 Roberts T.R. 2001. *Downstream ecological implications of China's Lancang Hydropower and Mekong Navigation Project*, p.2, http://www.internationalrivers.org/files/tyson%20roberts%20paper%20on%20yunnan.pdf (Accessed 9 October 2009).

Yunnan Province earlier this month."[380] This flooding caused millions of dollars worth of damage from inundated housing and agricultural crops. However, the MRC denied that the flooding was a result of the Lancang Cascade releasing water from reservoirs, by stating that *"The current water levels are entirely the result of the meteorological and hydrological conditions and were not caused by water release from presently operating Chinese dams which have storage volumes far too small to affect the flood hydrology of the Mekong."*[381] By highlighting the 'storage volumes' of the Chinese dams being 'far too small', the MRC did not elaborate on the future capacity of the Lancang Cascade. In 2008, only the Manwan, Dachaoshan and Jinghong hydroelectric projects along the Lancang were operational.

The Xiaowan and Nuozhadu hydroelectric projects that are under construction presently will have much larger reservoirs than the Manwan, Dachaoshan and Jinghong hydroelectric projects (see Figure 3); and many experts suggest, the new dams, once complete, will have significant implications for the riparian communities of the MRC states. When Xiaowan dam is fully operational, dry season flows are able to be *"increased by 70% as far as 1,000 km downstream"*,[382] near the Laotian capital Vientiane, as a result of releasing flood waters captured along the Lancang during the monsoon season. Lu, Wang and Grundy-Warr believe that containing the flood waters during the monsoon season is positive because it is possible to have a constant flow of water downstream during dry season which is beneficial for agricultural irrigation and flood control.[383]

However, the impact of the dredging and rock blasting along the Lancang-Mekong river-bed for it to be navigable will make flooding a more likely occurrence.[384] There are plans to make Lancang-Mekong more navigable so that larger ships are able to travel into Yunnan Province from downstream. A good example of these plans is the Ganlanba dam. The Ganlanba dam, which is part of the Lancang Cascade, was undergoing preparation to be both a hydropower and navigation station by Yunnan Province's Transportation Office in December 2005.[385] Roberts states that *"channeling of the Mekong to maximize its navigation capacity undoubtedly the aim of the Chinese will decrease substantially resistance to stream flow in the entire Mekong mainstream below Yunnan. Water will flow much more rapidly to the sea. The resulting loss of retention capacity will cause faster run-off in the Mekong mainstream at all times, in the dry season as well as in the wet season."*[386] However, in 2000, an agreement called the 'Commercial Water Navigation Agreement' (also known as the 'Upper Mekong-Lancang Agreements and Protocols') was signed by China, Myanmar, Lao PDR and Thailand at the 9th Greater Mekong Sub-region conference between Ministers on cooperation. The ADB was "*requested to assist in developing and improving water transportation in the subregion"* at the conference.[387]

It is of socio-economic and developmental benefit to open the upper Lancang-Mekong river basin to a greater volume of trade from shipping. Furthermore, river transport is comparatively environmentally friendly. According to the United Sates Department of Transportation, river transport is over 8 times

380 Richardson, M. 2008. *Mekong flood woes in Southeast Asia: China's dams a cause for concern*. The Straights Times, 28 August, 2008. http://www.iseas.edu.sg/viewpoint/mr28aug08.pdf (Accessed 11 October 2009).

381 Yaphichit S.O. 2008. *Press Statement on Current Mekong Flood Situation*. MRC No.12/08 Vientiane, Lao PDR., 15 August 2008. http://www.lnmc.gov.la/lnmc/index.php?option=com_content&view=article&id=13:press-statement-on-current-mekong-flood-situation&catid=2:inter-news&Itemid=8 (Accessed 11 October 2009).

382 Lu, X. X, Wang, J. J & Grundy-Warr, C. 2008. *Are the Chinese Dams to be blamed for the lower water levels in the lower Mekong?* in Kummu M., Keskinen M., and Varis, O. (eds). Modern Myths of the Mekong, Water & Development Publications, Helsinki University of Technology, 2008, p. 39. http://www.water.tkk.fi/English/wr/research/global/myth/04_Lu&al_Myths-of-Mekong.pdf (Accessed 11 October 2009).

383 *Ibid.*

384 Roberts, T.R., p. 3.

385 Yunnan Daily. 2005. *Ganlanba Navigation Complex Project being prepared* (Original article in Chinese and translated by Kevin Yuk-shing Li), Yunnan Daily, 15 December 2005. http://www.yndaily.com/html/20051215/news_88_765167.html (Accessed 12 October 2009).

386 Roberts T.R, p. 3.

387 Greater Mekong Subregion. *Appendix 4 - Opening Borders and Working Together*. Ninth Ministerial Conference on Subregional Economic Cooperation Program. http://www.adb.org/Documents/Events/Mekong/Proceedings/min9_app4.asp (Accessed 12 October 2009).

more fuel efficient for 1 ton of freight than for it to be transported by road.[388] Consequently, it is clear that the potential developmental benefits from trade outweigh the environmental concerns in the context of regional decision-making. However, that China, Myanmar, Lao PDR and Thailand signed the agreement on commercial navigation implies that responsibility for the consequences of dredging and blasting the river-bed are shared.

6.7.3 Implications for Fisheries

The fisheries industry is of vital significance to the Mekong river basin region and could be threatened by the Lancang Cascade. There are between 1,200-1,700 species of fish whose habitat is the Lancang-Mekong. According to Tyson Roberts, a fisheries expert, fish account for *"perhaps 80% of all animal protein consumed in Cambodia."* [389] The Lancang-Mekong fisheries industry is of vital importance to the well-being of thousands of riparian communities that live in the river basin. The Lancang-Mekong fisheries industry is worth in excess of US$ 1.7 billion according to the World Wildlife Fund.[390]

Fish that are unique to the Lancang-Mekong will potentially face extinction due to the Lancang Cascade. Roberts believes that many smaller species of fish that are only found in the Lancang-Mekong but are not captured by fishermen will be adversely affected by the Lancang Cascade. These fish are important to the food-chain and will be prevented by the cascade from making their regular migration route downstream. This disruption of the fish food-chain will have consequences for the amount of fish available that are of economic significance to fishing communities.[391] With regards to the Dachaoshan Dam and impeding fish migration, the ADB reports that *"Twenty-nine species of fish are reported in the area around the dam, but are mainly of low or no economic value."*[392] This does not take into account the importance of these fish to the overall fish food-chain which produces fish that are of economic value that Roberts elaborates upon. The ADB also confirms that fish migration from upstream is already impeded by the Manwan dam.[393] Furthermore rising water levels during dry season as mentioned in section 6.7.2, have negative impacts on fish breeding cycles.[394]

However, the accusations that the dams constituting the Lancang Cascade are wholly impeding fish migration further downstream, while partially accurate, do not reflect a balanced perspective on the issues surrounding fisheries downstream. The dam building boom along the entire Lancang-Mekong elaborated on previously in this report (section 3.6.1) also prevents fish migration and development downstream. That all nations in the Mekong river basin are engaged in dam construction, and not solely China, consequently implicates all respective governments as being responsible for the health of the fishing industry along the Lancang-Mekong.

6.7.4 Implications for Agriculture

Like the fisheries industry, agricultural production could be adversely affected by the Lancang Cascade. Flooding in the riparian areas of the Lancang-Mekong during the monsoon is essential for rice cultivation. Consistent rice cultivation is vital regionally for international export as well as domestic consumption. Regulation of the Lancang may prevent the natural flood waters reaching the downstream sections of the Lancang-Mekong, particularly the Mekong Delta in Viet Nam, where a reduction in sediment from

388 Mekong River Commission. *Navigation Programme*. http://www.mrcmekong.org/programmes/navigation.htm (Accessed 12 October 2009).

389 Roberts, T.R, p.7.

390 *Mekong-Lancang*. 10 Rivers at Risk. http://www.panda.org/about_our_earth/about_freshwater/freshwater_problems/river_decline/10_rivers_risk/mekong_lancang (Accessed 9 October 2009).

391 Roberts, T.R, p.8.

392 Appendix 6, p.373.

393 *Ibid,* p.382.

394 Antaseeda, P. 2002. *Upstream power play.* Perspective, Bangkok Post, 22 December, 2002.http://www.livingriversiam.org/mk/Mek_dam_nE3.htm. (Accessed 9 October 2009).

a lack of flood water will degrade annual rice production. In 2005, the then Prime Minister of Viet Nam, Phan Van Khai, called on all relevant states to recognize that the exploitation of the Mekong should not compromise the livelihoods of people living downstream who use the river for farming.[395] David Blake emphasizes the role of the Lancang Cascade in flood regulation by saying that *"fewer flood events on to the natural flood plain should occur, again reducing soil fertility restoring processes from sediment and nutrient deposition over a wide area. This will chiefly affect rice cultivation and long term yield declines can be expected."*[396] Blake suggests that in order to avert the problems caused by the loss of silt from upstream, artificial fertilizer would have to be used by farmers which would be an expensive burden for already impoverished people.[397]

Another agricultural problem that arises from the regulation of the Lancang Cascade is its impact on traditional river-bank farming practiced throughout the Lancang-Mekong river basin region. A diverse range of crops are grown on river banks and small islands in and along the Lancang-Mekong. Roberts says that these river-bank crops make an *"enormous contribution to the local quality of life."*[398] These crops do not require artificial fertilization. According to Roberts, the lack of silt flowing down the Lancang-Mekong from Yunnan will dramatically affect the ability of people to continue to farm these crops productively.[399]

The construction of the Lancang Cascade will cause impacts on the flooding cycle and will have impacts on the agricultural and fishery sector. The impacts ultimately concern people's livelihoods and well-being. How to best manage the regulation of dams in the Lancang Cascade therefore requires constructive, transparent dialogue to be shared amongst all concerned parties as outlined in the 2000 WCD report.

6.7.5 Dialogue and International forums for decision-making participation

Dialogue between the nations that share the Lancang-Mekong concerning the decision-making process of water management in relation to the energy technology of hydropower is vital for insuring their respective citizens' well-being. The dialogue institutions that are particularly relevant to the management of hydropower are the MRC and the Greater-Mekong Sub-region (GMS) forum. China's asymmetric relationship with downstream states often sees it accused of acting unilaterally and without consultation. China is not a full member of the MRC, but it is a member of the GMS. The decision-making process for information sharing agreements, which reflect the precautionary principle, occurs within these dialogue bodies.

The MRC was established on April 5, 1995 when Thailand, Lao PDR, Cambodia and Viet Nam signed the 'Agreement on the cooperation for the sustainable development of the Mekong River Basin' (1995 agreement). The MRC's precursor organization was the Mekong Committee which was established in 1957 by UNECAFE.[400] The Mekong Committee was replaced by the Interim Mekong Committee in 1978 which subsequently disbanded in 1992. China is not a signatory to the 1995 agreement. The 3rd chapter of the agreement contains the 'Objectives and Principles of Cooperation' which elaborates on the shared responsibility to cooperate with "*Projects, programs and planning; Protection of the Environment and Ecological Balance; Sovereign Equality and Territorial Integrity; Reasonable and Equitable Utilisation; Maintenance of Flows along the Mainstream; Prevention and Cessation of Harmful Effect; State Responsibility*

395 Vietnamese Ministry of Foreign Affairs. 2005. *Vietnamese PM addresses second GMS summit* 5 July 2005. http://www.mofa.gov.vn/en/nr040807104143/nr040807105001/ns050706090918 (Accessed 11 October 2009).

396 Blake, D. 2009. *China's Mekong Dam Plans*. http://hanoi.not.free.fr/barrages_lancang.htm (Accessed 12 October 2009).

397 *Ibid.*

398 Roberts, T.R, p. 8.

399 *Ibid.*

400 Mekong River Commission. *About the MRC*. http://www.mrcmekong.org/about_mrc.htm (Accessed 10 October 2009).

for Damage; Freedom of Navigation; and Emergency Situations."[401] These areas of cooperation reflect the ethical principles of state sovereignty, precaution and sustainable development.

However, by not signing the 1995 agreement, China signed an agreement with the MRC in April 2002 called 'The Agreement on the Exchange of Hydrological Data from the Lancang-Mekong' which resulted in China providing "*the MRC Secretariat with daily water level and rainfall data from two Lancang River hydrological stations at Yunjinghong and Man'an during the flood season from 15 June-15 October each year.*" The months from June-October constitute the regions' monsoon season where flooding would be particularly dangerous if water from the Lancang Cascade was unexpectedly released. This 2002 information sharing agreement is in line with Article 9 Section 1 of the 1997 Convention on the Law of the Non-navigational Uses of Watercourses which says *"watercourse States shall on a regular basis exchange readily available data and information on the condition of the watercourse, in particular that of a hydrological, meteorological, hydrogeological and ecological nature and related to the water quality as well as related forecasts."*[402] Additionally, as of July 29, 2009 at a dialogue meeting in Vientiane, China affirmed its commitment to working with the MRC for the better management of the Lancang-Mekong.[403]

According to Ellen Bruzelius Backer, there are good *"reasons why China is not a member of the Mekong River Commission."*[404] Backer states that firstly, China is unwilling to make a concession for the Mekong by joining the MRC because it has 15 other international rivers and 40 tributaries. If China signed the 1995 agreement and joined the MRC, it would set a precedent for all its other international rivers. Secondly, China is said to prefer broader regional agreements like the GMS for dialogue because the MRC does not adequately acknowledge the contribution the upstream section of the Lancang-Mekong makes to the downstream in the 1995 agreement.[405]

The GMS programme is a development project propagated by the ADB that began in 1992. The GMS is made up of the riparian states of the Lancang-Mekong which are China, Lao PDR, Myanmar, Thailand and Viet Nam. There were 31 GMS related events in which China was able to discuss water resource management, navigation, fisheries and agriculture between 1996 and 2004 compared to 7 held by the MRC.[406] Another forum of participation that China is a member is the ASEAN-Mekong Basin Development Cooperation (ASEAN-MBDC) which was created in 1996. The core directive of the ASEAN-MDBC is *"to enhance economically sound and sustainable development of the Mekong Basin."*[407] China actively supports the ASEAN-MBDC. Former Vice-Premier of China Zeng Peiyan said that further cooperation along the Lancang-Mekong through ASEAN-MDBC dialogue *"will help the countries involved improve the investment environment, accelerate the pace of development, and enhance economic strength and international competitiveness."* Consequently, despite China not being a member of the MRC, dialogue is able to occur that reflects the minimization of harm.

401 Mekong River Commission. 2005. *Chapter 3*. Agreement on the cooperation for the sustainable development of the Mekong River Basin 5 April 1995. http://www.mrcmekong.org/agreement_95/agreement_95.htm#chap3 (Accessed 10 October 2009).

402 Resolution 51/229. 1997. *Convention on the Law of the Non-navigational Uses of International Watercourses*. 21 May, 1997. http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf (Accessed 10 October 2009).

403 Mekong River Commission. 2009. *China re-affirms commitment to Mekong/Lancang cooperation and sharing information*. 29 July 2009. http://www.mrcmekong.org/MRC_news/press09/29Jul-09-China-re-affirms.htm (Accessed 10 October 2009).

404 Backer, E. B. 2007. *The Mekong River Commission: Does It Work, and How Does the Mekong Basin's Geography Influence Its Effectiveness?* Fridtjof Nansen Institute, April 2007, p. 43. http://www.fni.no/doc&pdf/ebb-mekong-2007.pdf (Accessed 11 October 2009).

405 *Ibid.*

406 Onishi, K. 2005. *Hydropolitics of China and Downstream Countries in the Mekong River Basin*. Role of Water Sciences in Transboundary River Basin Management. Thailand, 2005, p. 163. http://www.mekongnet.org/images/b/b6/Onishi.pdf (Accessed 9 October 2009).

407 ASEAN. 1996. *Basic Framework of ASEAN-Mekong Basin Development Cooperation*. Kuala Lumpur, 17 June 1996. http://www.aseansec.org/6353.htm (Accessed 12 October 2009).

6.7.6 Chinese investment in Mekong hydropower construction

As mentioned in section 6.7.1, the Southeast Asian region is undergoing a dam building boom. A significant proportion of these dams are being built by Chinese state owned companies. Deetes and Noam report that in 2007 there were an estimated 52 dams being built by 21 different Chinese state-owned companies in Southeast Asia, the majority of which are along the Mekong or its tributaries.[408] Hydropower Projects being constructed along the Mekong include 11 in Cambodia, 11 in Lao PDR and 6 in Viet Nam. There are at least 24 dams being constructed in Myanmar by Chinese state-owned companies, however, these dams are being built on the Ayeyarwaddy and Salween Rivers or their respective tributaries. The relatively small portion of the Mekong that flows through Myanmar is being dredged for the navigation project discussed in the following section 6.7.2. The involvement of Chinese business in regional dam construction highlights the increasing interconnectedness between states that form the Greater Mekong sub-region. Some commentators view this negatively, as though China has pervasive influence over the future of the Mekong.

China is not the only nation involving itself in the hydropower boom in GMS states. According to a July 2009 survey made by the International Rivers NGO, only 15 of the 74 (20.2 per cent) hydropower projects in Lao PDR are being constructed by Chinese state-owned companies. Other countries with companies making investments in the Lao PDR hydropower industry include: Belgium, France, Japan, the Republic of Korea, Malaysia, Norway, Russia, Thailand, the United States of America, Viet Nam in addition to Lao PDR itself.[409] Most of the energy produced from hydropower in Lao PDR will be sold on to other nations (predominantly Thailand) through bilateral agreements.

There are on-going talks for the GMS to have a regional power grid, (loosely titled the 'GMS Power Grid'[410]), which is officially referred to by the ADB as 'Expanded GMS Energy Cooperation'[411] while talks are ongoing. For the ADB, a GMS regional power grid drawing electricity from hydropower would contribute significantly to regional development through cheap electricity from hydropower while helping to mitigate climate change. There are some concerns however, that the project costs too much for the reported benefits. However, that there is discussion on the matter by regional governments highlights that GMS governments are in part complicit in the disruption of the Lancang-Mekong rather than solely China.

6.7.7 International Laws concerning Shared Rivers

There are no international laws in force concerning the non-navigational uses of shared rivers.[412] Issues surrounding non-navigational rights of states and international rivers have been discussed since the

408 Noam, Z. and Deetes, P. 2007. *Chinese Hydropower Industry Investment in the Mekong Region – Impact and Opportunities for Cooperation: Perspectives from Civil Society*, *China-ASEAN Power Cooperation & Development Forum, 2007. www.livingriversiam.org/.../Investment_in_Mekong-China_Power_2007_Paper.doc* (Accessed 26 November 2009).

The state-owned companies are: Central China Grid Company, China Electrical Equipment Corporation, China Gezhouba Group, China International Trust and Investment Corporation, China International Water and Electric Corporation, China National Electronics Import and Export Corporation, China National Heavy Machinery Corporation, China Power Investment Corporation, China Southern Power Grid Company, China Yunnan Corporation for International Techno-Economic Cooperation, Datang International Power Generation Company, Guangdong New Technology Import Export Zhuhai Company, Guangxi Grid, International Trust and Investment Corporation, Sinohydro Corporation, Sino-Vietnamese Electricity Investment Corporation, Technology Company, Yunnan Huaneng Lancang River Hydropower Company, Yunnan Joint Power Development Company, Yunnan Machinery & Equipment Export & Import Company, Yunnan Power Grid Corporation, Yunnan Southeast Asia Economy and Technology Investment Industrial Company.

409 International Rivers. 2009. *Existing and Planned Hydropower Projects*. 1 July 2009. http://www.internationalrivers.org/files/LaoHydroReportJul09.pdf (Accessed 26 November 2009).

410 Greacen, C.S. 2005. GMS Power Grid: Who gains, who loses? 17 July 2005. http://www.palangthai.org/docs/GMSgrid(eng)17July05.ppt (Accessed 26 November 2009).

411 Asian Development Bank. 2009. *Subregional Energy Forum: Special Meeting to Finalize the Road Map for Expanded GMS Energy Cooperation (18-19 March 2009)*. GMS Sector Activities: Energy. http://www.adb.org/GMS/sector-activities/energy.asp#ener-16 (Accessed 26 November 2009).

412 Refer to ECCAP WG14 for a more general discussion of water ethics and governance of shared rivers.

18th century.[413] Salah El-Din Amer states that *"the fundamental problem is in determining whether a state can use the waters of an international river in any way it pleases, or whether certain legal norms exist to protect the interests of other riparian states."*[414]

6.8 Conclusion

This case study selected policy and development undertaken by one nation, China, and showed the complexity of delivering policy choices through multiple layers of administration.[415] The decisions taken by any country, especially in a continental land mass affect many others. No doubt similar studies could be undertaken for other countries and regions, but there are important lessons for governance. One of the issues is the size of China, and we can reflect on the similar complexities of administration through large centralized systems including not just nation states but also regional blocs such as the EU, or ASEAN.

The central government located in Beijing plays a paramount role within the context of representation and decision-making in China. The constant energy sector reform throughout the last three decades (relaxing or tightening control) is the responsibility of the central government whose members are representatives from the world's largest political party (the CCP). There are overlapping interests and roles between energy related administrations. All corporations involved with hydropower are state-owned. Provincial and local administrations are subordinate to the central government. If provincial and local administrations gather too much control over energy planning (particularly with regards to privatising finances), the central government retakes authority. The decision to construct a cascade of hydropower dams comes in the context of mitigating development and climate change, which are issues of national importance.

The overall findings of the WCD with regards to participation ring true for the hydroelectric development occurring along the Lancang thus far. The resettlement of residents affected by Manwan dam had to be reassessed six years after the projects completion because of the inadequacy of the original resettlement plan. Although there is yet to be a post-SIA for Dachaoshan dam, the resettlement policy summaries contained in various ADB reports suggests that there had not been much evolution in policy from the beginning of Manwan hydropower project in 1986-1996. Whether there has since been an evolution in Social Impact Assessment and participatory involvement of people within the vicinity of the project remains to be seen.

Internationally, the communication between China and other riparian states of the Lancang-Mekong has been limited. Communication is improving with water-level information sharing agreements signed, and more avenues of communication being mooted between all parties. Though these positive actions do not mask-over the potential damage the Lancang Cascade could cause further downstream. However, that other riparian states along the Lancang-Mekong are experiencing their own dam building 'booms', suggests that China cannot be the sole bearer of responsibility for harm caused in all cases downstream.

In order to avert the negative consequences of large dam construction, the continuing needs of directly affected peoples need to be addressed. This includes focusing on making livelihood improvements, having continued access to development options, transparent information sharing for all parties, continual reviews and monitoring of environmental situations that impact on social conditions and moving away from a "*balance sheet approach to decision-making in favour of broader, inclusive and more timely, multi-criteria approaches to planning and decision-making.*"[416]

413 El-Din Amer, S. 1997. *The law of water - Historical Record*. Options Mediterraneennes, Centre International des Hautes Etudes Agronomiques, Ser. A/No.31, 1997, p. 381 http://ressources.ciheam.org/om/pdf/a31/CI971551.pdf. (Accessed 11 October 2009).

414 *Ibid,* p. 382.

415 Refer to ECCAP WG14 on Water Ethics.

416 The Report of the World Commission on Dams, p. 193.

7. Policy Options for Enhanced Representation

7.1 Policy Approaches and Good Governance

There is pressing need to address environmental harm on a global level through sound policy. The decisions and indecisions of governments in cases such as those described in this report can cause irreversible damage to both people and the environment. Cases like these can be documented in most countries. Effective measures need to be executed, to ensure that pollution control and health protection measures keep pace with both economic and ethical development. Decision-makers in many countries have a propensity to segregate economic, social and environmental factors. However, in the face of increasing harmful consequences to people and ecosystems, countries can hardly afford to make decisions without considering all factors.

It is now essential to restructure decision-making processes in order to acknowledge that economic, social and environmental factors are all connected and long term risk-benefit analysis to each stakeholder needs to be developed.[417] Because what constitutes a benefit and harm to each person depends upon their own values they need to be represented in all steps of the development of a project. Policy approaches to ensure representation of each stakeholder at each step in the process are important, and as the case studies reveal, there are different models that can be used. Vulnerability of persons can be overcome by targeted methods including legislation if the persons are empowered sufficiently through the implementation of laws and guidelines.

The energy sector does not stand secluded from other forms of activity in today's world. Thus, energy policies need to maintain consistency with policies of other sectors, such as environmental protection and responses to climate change. Energy policies must be concerned with economic efficiency and competition, and also take into account issues regarding the broader impacts of energy use on social equity and the environment, as well as sustainability of energy resources and security of supply. Environmental policy instruments can be generally referred to as methods employed by governments to encourage the implementation of measures, so as to achieve societal objectives of limiting the effects of economic pursuits on the environment.

Policy instruments can be categorised into three broad groups, firstly, regulatory approaches, secondly, economic instruments, and thirdly, decentralised approaches. With regard to regulatory approaches, authorities determine the necessary conduct to be accepted by actors. The enforcement of the conduct may be by mandatory measures. For economic instruments, the conduct desired by authorities is encouraged through the use of price incentives rather than by directives used in regulatory approaches. For instance, in the case of environmental policies, the provision of incentives to corporations with the greatest reductions in pollution amount to a form of economic instrument. The Kyoto protocol emissions trading mechanism is also a form of economic instrument. Decentralised approaches are policies that allow the individuals involved in a conflict, such as a case of environmental pollution, to work out a solution on their own.

Regulatory approaches are widely used in developed countries, and are often successful in improving environmental quality. However, the rigid and prescriptive characters of these approaches are likely to deter the advancements of other creative environmental management practices. In addition, although regulatory approaches are often effective in the control of pollution problems caused by identifiable sources, they are not as effective when it comes to diffusive sources of pollution that are prevalent in agriculture and rural industries. Environmental policies should adopt approaches that incorporate regulatory approaches, economic instruments, as well as decentralised approaches so as to accomplish multiple goals.

Progressively more national energy and environmental policies are being modeled after frameworks appearing within an international milieu. Policies of one country may have an impact on other countries positively or negatively, indicating that national governments do not have the liberty to implement

417 Zhou, Deming. *Social Aspects of Environmental and Ecological Sustainable Development*. http://www.eolss.net

policies on an isolated stance.[418] The climate change dilemma arising from energy use has necessitated synchronisation of energy and environmental policies between countries in order to realise national and international objectives. Nevertheless, the mere existence of policy objectives does not ensure their successful implementation. Constant evaluation is required to monitor a country's compliance with policies

Conservation and protection of the environment can only occur in the presence of good governance and through the upholding of the law. "Governance" has been defined as *"the process of decision-making and the process by which decisions are implemented"* (UNESCAP, 2002), and as *"the framework of rules, institutions, and practices that set limits and provide incentives for the behaviour of individual and organisations"* (UNDP, 1999). Notably, governance is not limited to government. It includes both state and non-state actors, and requires both formal intergovernmental processes as well as governance from below.

The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) has associated good governance with transparency, participation, equity, inclusiveness, and the rule of law – these characteristics are essential to realising sustainable development objectives in the declarations of the United Nations and regional forum.[419]

Good governance stipulates that the process of decision-making be instigated openly and legitimately, and requires an involvement of public participation or stakeholder engagement in order to attain competent policies with regards to issues of energy and environmental governance. Stakeholder groups include the general public (e.g., women's groups, individuals and families, indigenous groups, and religious groups), the government, representative assemblies (national and local assemblies, district and municipal assemblies, elected community leaders), private sector (corporations, professional associations), civil society organisations (national and international non-governmentalal organisations, grassroots organisations, trade unions, policy development and research institutes), as well as donor institutions.[420] Engaging stakeholders in the process of planning and management assists in ensuring that projects consider needs of the public and balance differing interests, so as to avert or mitigate adverse impacts and thus improve prospects for sustainability. Stakeholder engagement can occur in various forms, several forms being public consultation at the beginning of the initiation of new regulatory instruments, stakeholder representation on advisory boards, regular stakeholder surveys and grievance committees. Local communities, sector representative groups and non-governmental organisations should be approached to ascertain full participation. Special consideration should be directed towards vulnerable groups of stakeholders, for whom additional consultation may be required.[421] It encompasses both individual and collective aspects, and applies to economic, social, cultural and political dimensions, which jointly contribute to the notion of democracy.

Good governance also entails proper legal institutions and governments that abide by the rule of law. Feeble judicial systems, whereby laws are not complied with and where the system is undermined by the practice of corruption, will emasculate reverence for the rule of the law, leading to environmental deterioration and also encumber progress towards development, sustainable or otherwise. Nevertheless, most critics contend that at both the national and international level, good governance and the rule of law remains merely an aspiration, and not a reality.

418 Refer to the case of Bhutan in ECCAP WG5, which has chosen a low energy and alternative development model, which is an alternative system. However, generally national governments seek to pursue energy intensive development schemes, but are constrained by concerns of climate change.

419 World Resources Institute. *Closing the Gap: Information, Participation and Justice in Decision-Making for the Environment*, p. 14.

420 Asian Development Bank. *Handbook on Social Analysis: A Working Document.*

421 Asian Development Bank. *Technical Note: Social Analysis for Transport Projects*.

7.2 Rights of the Public to Information, Participation and Justice

The importance of good governance is reinforced internationally in the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters of 1998 ("The Aarhus Convention"). The Aarhus Convention is a regional binding instrument of the UN Economic Commission for Europe (UNECE), but is open for non-UNECE countries to accede to it. It acknowledges that sustainable development can only be attained through the participation and involvement of all stakeholders, and encourages greater transparency and accountability among government bodies by convening the following three pillars for the public: The rights of citizen access to information; Citizen participation in decision making; and Citizen access to justice in environmental matters.

Generally speaking, the Aarhus Convention is similar to Principle 10 of the Rio Declaration in warranting freedom of access to information on the environment, conferring upon citizens a right to participate in environmental decision-making, and providing for judicial and administrative remedies when state authorities deny the citizens. Principle 10 of the Rio Declaration provides that:

"Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making process. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."[422]

Chapter 8.4(f) of Agenda 21 provides for the right to public participation and the right to information. It states that governments should ensure access by the public to relevant information, facilitate the reception of public views, and allow for effective participation. Chapters 23 and 40 also deal with the issues of access to information and participation of civil society in decision-making. Within this context, there are three keystones of public participation with regard to environmental issues:[423]

Figure 7: Related Conclusions of the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters of 1998 (The Aarhus Convention)

Right to information	Right to participation	Right to justice
The ability of citizens to obtain environmental information in the possession of public authorities.	• The opportunity for citizens to provide informed, timely, and meaningful input and influence decisions on general policies, strategies, and plans at various levels and on projects that have environmental impacts. • For instance, individuals may engage in electoral processes, testify at hearings and meetings, serve on advisory committees, have direct contact with public officials, express views and opinions through the media, or engage in some form of protest action.	The ability of citizens to turn to impartial arbiters to resolve disputes over access to information and participation in decisions that affect the environment. Such impartial arbiters include mediators, administrative courts, formal courts of law, among others.

There is growing evidence demonstrating that the processes of development are more effective when there has been access to information, participation in decision-making and justice. A World Bank study in 1998 revealed that projects that involved a full environmental assessment with public participation faired better in terms of their implementation as opposed to projects that did not involve public participation. Therefore there is a relationship between development outcomes and good environmental governance. Another study by the World Commission on Dams in 2002 showed that projects that did not permit public participation in planning processes or resettlement decisions ensued in the most unsatisfactory social outcomes.[424]

422 Sachiko, Morita. Rule of Law, Good Governance and Sustainable Development, p.17.

423 Dresang, D.L. and Gosling, J.J. Politics and Policy in American States and Communities.

424 Above, n31.

There could be considerable improvement towards more inclusive, accountable and transparent governance in the developing countries of the Asia-Pacific region. The concepts and practices of democracy are different in some of these nations to Western countries, but like many other developing nations globally, extra efforts will be required to enhance rights to decision-making processes and public participation, as well as strengthen civil society.

7.3 Models for Participation

7.3.1 Participation in the Formulation of Policies

Public participation may be generally defined as "*the practice of consulting and involving members of the public in the agenda-setting, decision-making, and policy-forming activities of organisations or institutions responsible for policy development*".

Recently there has been a growing concentration in engaging the public in decision-making with regard to energy policies, especially on matters pertaining to the management of environmental and health risks, demonstrated by a shift from a traditional model of governance in which expert advice poses as the commanding basis for directives, towards a model in which citizens play a role in influencing government decisions. Governments have increasingly endorsed public views with regard to policy issues in a more definite manner than required by past models of governance whereby decision-makers determined policies without additional public contribution. The reasons for the emergence in interests concerning public participation in policy matters are generally due to an increased respect for human rights, or a desire to counter declining public confidence and trust in decision-making processes, and to prevent widespread feelings of resentment from non-consulted public toward governing agencies. Increased scepticism towards science, and persistent emphasis on the concept of sustainable development has also contributed to the widespread promotion of participation from top-down approaches. Actual participation however requires willingness from all stakeholders, including those who may be skeptical about its relevance to them.

Participation in the development of public policy helps to ensure support from stakeholders with regard to the decisions made. Even though it is often believed that a dialogue between stakeholders should aim to achieve consensus, such a focus tends to restrain diversity of opinions, and rather than reaching a quality decision, a merely agreeable decision is made. Participatory processes should embrace the "shared diversity principle", which appreciates the multiplicity of values participants may hold, and recognises that compromises to decision-making are essential.[425] The more stakeholders feel that they are given a voice in decisions that concern them; the more likely they will accept policy and new developments, and be more motivated to continue to actively engage. Nonetheless, the implementation of public participation exercises still faces substantial difficulties. Further research is required to better develop effective participatory approaches.

Public participation entails the involvement of the public in many different ways and levels. Methods used to implement participation are expanding, and include public meetings, consensus conferences, surveys and focus groups. However, the evaluation of participation exercises remains difficult due to the absence of a prevalent benchmark for assessing success and failure of an exercise, an absence of established evaluation methods, and a lack of dependable measurement mechanisms.

7.3.2 Advantages and Disadvantages of Participation

Stakeholder participation in government decision-making brings advantages to citizens that they are given some control over policy processes, and that they benefit from increased knowledge of the issues, and general social learning. Disadvantages to the citizens involved are that participation processes can sometimes be time-consuming or result in "consultation fatigue" where ambiguities may postpone decisive action, misrepresentation may occur, and feelings of discouragement may arise if citizen perspectives are ignored.

425 Reed, Mark, S. *Stakeholder Participation for Environmental Management: A Literature Review.*

As for the government, advantages include the ability to build trust and to reduce hostility of citizens, avoiding litigation costs, and the possibility of making better policy decisions. Disadvantages are mainly that participation processes may be costly in terms of money and time, and the processes could result in increased antipathy towards the ideas that the government was promoting, and that the government loses a portion of decision-making control.[426]

7.3.3 Quality of Participation

The quality of participation may affect citizens' judgment about the responsiveness of government agencies. Furthermore, studies have contended that although stakeholder participation may improve the quality of environmental decisions, the quality of environmental decisions are also contingent on the quality of participatory processes.

Low-quality participation typically involves top-down communication and a one-way flow of information, such as passive sharing of information about risks to members of the public. It can be viewed as a form of 'token' participation conducted with little intention to act on public opinion, which often has the effect of increasing public dissatisfaction and a reluctance to further participate. On the other hand, high-quality participation involves dialogue and two-way information exchange, which implies some level of empowerment or shared control in decision-making. This can be considered a form of participation that is both accessible and satisfying to participants, and which has the capacity to contribute in a constructive manner to effectual, legitimate decision-making. Theorists of participatory democracy contend that the ability to be involved in high-quality participation can increase an individual's trust in government performance and tolerance with regard to different views.

High-quality participation has been cited as "*using the best available scientific information, having a genuine influence on decisions, promoting communication and learning, and treating all citizens equally*." Stakeholder participation should be taken into account at the beginning of a participatory process, where concept development and planning occurs, through to implementation, monitoring and assessment of results. However, it remains common for stakeholders not to be involved at the concept and development stages, and only to start being involved, if at all, at implementation and later stages of a project plan. This means that stakeholders are usually involved in a project that is inconsistent with their interests.

There is a need to empower participants through processes by ensuring that participants have real power to influence decisions, and that they have sufficient technical ability to engage competently with decisions. When decisions are highly technical, participants should be educated so that they can acquire the necessary knowledge to make informed choices. It is also important for researchers and local communities to work closely together and adopt an integrated approach that considers both scientific and local knowledge. Scientific knowledge is deemed to contribute to a more thorough comprehension of complicated matters and processes, and provides the "know-why", whereas local knowledge, or the "know-how", is able to contribute practical information that is unique to a certain group of people or to a particular region. Using a combination of specialized/scientific knowledge and local knowledge may allow local communities to examine potential environmental changes more efficiently, as opposed to using only scientific knowledge.[427]

In addition, power inequalities within groups, such as inequalities in age, gender and social status, act as obstacles to meaningful engagement, thus it is important to contemplate ways in which these inequalities can be surmounted for all stakeholders to participate fairly. For example, when dealing with a group of participants with various educational backgrounds, ranging from individuals with no formal education to individuals with high-level education, technical workshops displaying diagrams and charts can be substituted with site visits where all participants would experience a better understanding of the situation. The appropriate design of meetings requires consideration of the particularities of the case. For example, in the case of a situation where there are particular cultural taboos that preclude

426 Santos, R. and Antunes, P. *Stakeholder Participation in the Design of Environmental Policy Mixes.*

427 The Report of the World Commission on Dams. 2000. *Dams and Development: A New Framework for Decision-Making*. Earthscan Publications.

women from speaking in the presence of men, separate focus groups for men and women should be provided.[428]

High-quality participation may be achieved in several ways such as actively incorporating public views through consultation exercises, focus groups and surveys or questionnaires, or selecting members of the public to be engaged in exercises that present them with some decision-making authority. For instance, many people prefer face-to-face consultation as opposed to one-way procedures such as the submission of written comments. The participants' belief that decision-makers will seriously consider their comments, and that the decisions will reverberate their preferences are factors that boost satisfaction. Respectful discussion is also important, which requires the decision-makers to demonstrate careful listening, and acknowledge the value of dissimilar perspectives. Individuals are more likely to give decision-makers the benefit of the doubt when decisions do not solve their concerns.[429]

7.4 Representation of the Developing World

The governments of many countries in the Asia-Pacific region are characterised to differing extents by traditional bureaucratic inflexibilities and administrative separatism within various governmental agencies, ensuing in the restriction of effective management. Governments of developing nations remain confronted by discrepancies in capacity and devices to allow them to evolve from centrally controlled entities to being truly decentralised units that are able to make decisions on development from an equitable approach. These governments are often burdened by instances of continuing patron-client relationships, the diminishing of traditional wisdom, and political corruption.

On a global scale, the meaningful participation of developing countries and their representation in international policies is required. Unfortunately, the international policy-making system continues to face challenges in fulfilling this requirement. Present practices and institutional procedures persist in encumbering the involvement of the developing world in international policy-making. In other words, countries of the developing world are said to suffer 'disenfranchisement' to varying degrees. Enfranchisement has been defined as "*the ability to both participate in and influence agenda-setting and decision-making in international regimes for sustainable development*".

Countries of the developing world hold similar rights to countries of the developed world under international law, in that they are recognised as sovereign nation states and have the autonomy to establish agreements with other countries. Despite this, they often lack real leverage to influence outcomes, and are still struggling to keep pace with rapid advancements in the global realm. In order for there to be enfranchisement, there must be the ability to participate by voicing opinions and the ability to influence the results of the decision-making processes. Accordingly, and as previously discussed in Chapter 2 of this report, legal rights do not guarantee effective participation.

The results of international policies do not always reflect on their effects on the developing world. For example, countries of the developed world have stimulated much of the climate change debate, however, since it has become apparent that the developing world will most likely suffer the burden of climate change impacts, the developed world has lightened its stance. The developed world has set the goals of climate change at a standard suitable for protecting themselves, but not at a standard necessary for protecting small islands or coastal populations of the developing world. Climate change dialogue has afforded priority to *mitigation*, rather than to *adaptation*. Adaptation can be defined as '*pre-organised crisis management*, used to counteract the repercussions of climate change when they occur. An adaptation strategy would be beneficial for developing countries. On the other hand, a mitigation strategy mirrors the preferences of developed countries, and is expressed in the Kyoto Protocol. With sustainable development challenges such as climate change, where costs and benefits are unequally distributed, developing countries' lack of resources to secure negotiating positions renders it more challenging for them to defend their own interests.

428 Note 425.

429 Halvorsen, K. E. *Assessing the Effects of Public Participation.*

Some of the obstacles encountered by representatives of developing countries are small or one-person delegation at meetings, insufficient knowledge of the English language, inadequate funds to travel to meetings, insufficient experience in multilateral negotiations, lack of expertise and technical knowledge about issues being discussed, and absence of instruction from state capitals. An absence of instruction from governments in some countries may be due to insufficient discussion at the national level, simply because the issues do not amount to a domestic concern. Engaging actors of the developing world does not only require altering institutional procedures, it also requires narrowing the discrepancies of capacity and representation between North and South.

7.5 Representation of Indigenous Communities in Decision-Making

The acknowledgement and observation of indigenous rights differ from country to country. The United Nations has acknowledged the lack of participation by indigenous peoples in many areas of society, leading to the establishment of a Working Group on Indigenous Populations, and the adoption of the Declaration on the Rights of Indigenous Peoples which emphasizes the rights of indigenous people to preserve their cultures and traditions, and to pursue development in accordance with their own needs. Although the Declaration is not legally binding, it represents international legal norms and the obligation of countries to shift towards certain objectives.

Although institutional pathways to participation are available for indigenous peoples in the countries examined in the case studies, these pathways do not appear to offer real chances for exerting influence on policy-making. Indigenous peoples continue to face obstacles to meaningful participation in decision-making processes.

Agenda 21 requires that indigenous people participate in resource management and conservation strategies, but does not require that they *influence* these strategies. This has ensued in many states endorsing the Agenda, but participation by indigenous peoples has remained superficial on the national and international level. For instance, several countries may invite indigenous representatives to be delegates at a meeting, but the indigenous representatives may not be able to genuinely contribute to the state position. Indigenous participation is often diminished to mere tokenism or 'participation in name only', serving to improve the credibility of the delegation.

It remains rare for policies *for* indigenous people to be exclusively developed *by* indigenous peoples. Policies should aim to provide meaningful participation for indigenous communities, whilst genuinely considering indigenous needs. Indigenous communities remain one of the most disadvantaged groups with lower educational qualifications, lower levels of income, lower rates of land ownership and poorer health. Indigenous people have been dispossessed of their lands and resources, and for this reason, the acknowledgment of their rights to traditional lands and resources on an unbiased basis is an important aspect for attaining equal opportunities for their development.

Presented below are five important factors for increasing indigenous representation:

Inclusiveness: Indigenous communities, like other communities, should be allowed to engage in decision-making processes concerning them from the initial stages through to the end. It is also important to ensure that meetings are held in the local language or translated to enable full understanding by indigenous participants.

Accommodating frameworks of nature and commune: Many countries recognise the significance of indigenous history, language, culture, and issues of identity, but fail to recognise that a particular country's definition of success and community benefits might vary from indigenous expectations. Governments need to consider that indigenous resources and systems may not necessarily work effectively within a mainstream model. Since most indigenous communities share a special relationship with nature, developing frameworks that encourage the attainment of natural and communal concord would be more favourable than frameworks that specify restricted, inflexible arrangements.

Adequate resourcing: Studies show that participatory processes for indigenous communities are most effective when they are instigated by indigenous members. However, these instigations are often

challenged by inadequate resources and lack of proper coordination. Indigenous communities often do not have sufficient resources to meaningfully participate in decision-making processes. It is important for government officials to ensure that adequate resources are distributed to indigenous communities at the beginning of participatory processes.

Protection of indigenous knowledge: Indigenous people possess traditional knowledge that can be used to preserve the environment and natural resources, however this traditional knowledge has not received sufficient protection from commercial exploitation, causing reluctance among indigenous communities in sharing this knowledge. These concerns raise questions for the current intellectual property rights systems, and for the World Intellectual Property Organisation (WIPO), and the Trade-related Intellectual Property Agreements of the World Trade Organisation (WTO). Unfortunately, representation and access by indigenous people to these intellectual property systems is not usually considered to be satisfactory by many indigenous groups. Effective legal instruments to protect indigenous knowledge need to be established.

Pluralism: Non-indigenous and indigenous participants should accept the presence of diverging perspectives and value these aspirations as a means of enhancing overall sustainability for society.[430]

7.6 Roles of Corporations in Decision-Making

Large multinational corporations, a key subject of many political debates and public opposition, have been identified as the core organisations of the twenty-first century in directing international policies (see Chapter 5 with regard BHP Billiton's involvement in the Olympic Dam mine). As entities, they are much more than companies merely selling products, and have developed to become driving forces of global investment, owners and developers of natural resources and modern technology, as well as major producers for world trade. Corporations exert a socio-political power, which impacts upon all parts of global society. They are the cause of environmental pollution as well as owners of technology that could help avert it.

The manner in which these corporations expand, together with their relations with state and societies, are important aspects to the possibility of reducing climate change risks and achieving sustainable development. Thus, it is essential that the application of ethics be incorporated into the global business policy arena. This has proven to be a challenging task because corporations are ultimately seeking economic profit to be accountable to their shareholders. Nevertheless, although corporations are interested in making profits, they also have a certain interest in considering public requests in order to project an image of responsibility before society and to remain efficient.

Some of the concerns of business ethics fall within the scope of various international agreements assented to by state governments. These agreements cover labour standards, human rights and environmental security, such as the International Labour Organisation (ILO) and the United Nations Universal Declaration of Human Rights. Critics allege that these standards or guidelines fail to provide sufficient guidance for responsible corporate behaviour.[431]

Corporate leaders often use the concept of Corporate Social Responsibility (CSR) to define and/or demonstrate the presence of responsible corporate behaviour, which takes into account societal and environmental preservation.[432] Recently, public apprehension regarding sustainability and social responsibility of corporations has become a key concern in many countries. In particular, the mining industry (discussed in Chapter 5) with its discovery, extraction and processing of minerals has been often considered as being one of the most environmentally and socially destructive business activities.

430 Jollands, N. and Harmsworth, G. *Participation of Indigenous Groups in Sustainable Development Monitoring: Rationale and Examples from New Zealand.*

431 In some countries there are guidelines for nationally registered companies, and in others CSR standards are optional. A number of Multinational Corporations follow CSR standards, including those set by the Global Compact.

432 Kurokawa, G. and Macer, D. 2008. Definitional imprecisions in strategic and non-strategic Corporate Social Responsibility. *Int. J. Management Concepts and Philosophy, Vol. 3, No. 2, 2008, p.* 121-133.

Many environmental calamities and human rights abuses have been associated with negligence of mining industries.

CSR refers to a number of initiatives that are important for corporations to adopt, especially where public opinion of a particular sector is poor. Public resentment can stem from unsatisfactory social and environmental performances, for instance, where a company carries out bribery for concessions, where there are forced evictions, a general lack of community involvement, and where company operations result in pollution and adverse health impacts.

The concept of CSR stipulates that corporations balance diverse demands of various stakeholders and the need to preserve the environment with the imperative to make profit. CSR requires that corporations take into account shareholders, affected communities and the general public on matters concerning human rights, employee welfare and climate change. To many corporations, the meaning of CSR is concerned with the cultivation of actions to achieve social good, and to act beyond the interests of the corporation, and beyond what is required by the law. One outcome of the CSR movement is the rising need for corporations to justify their operations and performances by disclosing social and environmental information, such as social and environmental impacts of corporate activities, the effectiveness of corporate social and environmental programmes, as well as reports on social and environmental responsibilities.

Social disclosure generally refers to information about a corporation's relations with its employees, communities and the general public. Environmental disclosure refers to information relating to the natural environment, protection of the environment, and use of resources. Social and environmental information are disclosed through a variety of media, including annual reports, booklets or leaflets, community reports, environmental reports, press releases and websites.[433] There are several concerns associated with such disclosure; for instance, the information published may lack credibility, especially if third party verification is absent, and that the information released may be unreliable due to selective publishing by corporations. To overcome these problems, it has been recommended that social and environmental reports be globally standardised in order to achieve uniform and effectual evaluations of social and environmental performances. Independent institutions that have established guidelines to increase public confidence in reporting systems include the AA1000 Assurance Standard and the Global Reporting Initiative (GRI). [434]

Corporations whose activities impinge on lifestyles of vulnerable groups of people must acknowledge the actual effects of their business on these communities. A parallel could be drawn from the case of mining corporations and the impacts of their operations on indigenous communities, to the point where problems surrounding mining operations and indigenous people are perceived to exist side-by-side. Since mining policies and regulations have become less stringent, especially in developing countries, mining corporations have been met with much public resistance resulting in an increasing need for these corporations to properly engage with indigenous communities. Specific Advisory Boards should be set up to guide policy and program development, explore the opportunities of creating employment for vulnerable peoples, and be able to consider their views to work to achieve mutually beneficial outcomes.

It might be useful for corporations to adopt national or international codes to demonstrate their commitment to consider social and environmental challenges. For example, Australia has established a voluntary code entitled the Australian Mineral Industry Code for Environmental Management, which acts as a guide to Australian mining industries that are keen on addressing problems associated with environmental performances and public accountability.

433 Kurokawa, G. and Macer, D. 2008. Asian CSR Profiles and National Indicators: Investigation Through Webcontent Analysis. *International Journal of Business and Society*, Vol.9 No.2, 2008, pp. 1-8.

434 Jenkins, H. and Yakovleva N. *Corporate Social Responsibility in the Mining Industry: Exploring Trends in Social and Environmental Disclosure.*

7.7 Summary of Policy Options

To exercise ethical decision-making, the presence of a good law on the statutes alone is insufficient. In this concluding section of the report there is a summary of key options for policy for enhanced representation in energy policy-making.

1) **Consistency between national and international policies:** The practices that are determined by the policies of one country have the ability to impact on other countries positively or negatively, which means that national governments may need to limit unbridled state freedom to implement policies, so they are consistent with international norms. There is a need to consider policy consequences on a local, national, regional and global scale, and synchronise these policies between countries. In some cases international agreements have already been articulated, which state parties need to follow, however, not all of these clarify the particular indicators to measure the attainment of such standards.
2) **Inclusion of developing countries in international policy development:** The meaningful participation of developing countries and their representatives in international policies is required on a global level. Developing countries, and communities within nations that include vulnerable groups, are at times disenfranchised from international policy-making in that they lack leverage in influencing decisions in international regimes. As a result international policies do not always reflect the interests of these stakeholders. Engaging developing countries requires the alteration of some institutional procedures, as well as the narrowing of differences in capacity between those who are powerful enough to voice their values and those who are not.
3) **Multifactorial impact analysis:** Each expert has a professional background for analysis of a specific issue, which can create a tendency to separately analyze scientific, economic, social and environmental factors. For impact assessment it is important that a range of professional methodologies are utilized, to measure specific indicators. However in order to comprehend the full consequences to all stakeholders, people and ecosystems, decision-makers should construct holistic synthetic decision-making processes that bring together the results of the specialized analysis of economic, ethical, social and environmental factors, and their inter-connections.
4) **Constant evaluation:** Constant evaluation should be carried out to monitor a country's consistency with attainment of the indicators that are identified in policies. Ongoing mechanisms for evaluation are required, which should involve not only the agent directly involved, e.g. the company or government, but independent mechanisms. The mere existence of policy objectives does not mean that implementation will be successful.
5) **Embrace scientific and local knowledge:** All policies should be based on credible scientific knowledge and review, which can be amended to take into account both prior and future scientific findings. The findings should include local knowledge with its uniqueness in environmental preservation. Some of the consequences of policy can be predicted based on evaluation of past policy and practices, but ongoing analysis of the broad impacts of policy is required for evidence-based policy. Complete analysis of all forms of knowledge, that derives from different methods including traditional forms of knowledge, will only enrich the concordance of the reality of the circumstances with the predictions made before, and allow improvements that will increase the chances of success.
6) **Stakeholder engagement:** Incorporating high-quality public participation or stakeholder engagement in policy-making is essential for ensuring that the needs of the public are considered. Stakeholders include the general public, possible vulnerable groups (e.g. migrants, economically poor, women's groups, indigenous groups, religious minorities, etc.), the government, representative assemblies, private sector (corporations, professional associations), civil society organizations, non-human members of the ecosystem. The more stakeholders feel that they are given a voice in decisions that concern them, the more likely they will accept policy and new developments, and be more motivated to actively engage.
7) **Attentiveness to differences:** Participatory processes such as consultative meetings, questionnaires and workshops need to be aware of the different characteristics or inadequacies of particular stakeholder groups. For instance, when dealing with individuals with no formal education, it is important to ensure that a mechanism is found for these persons to engage competently in decision-making, through being given necessary knowledge to make informed choices.

Some persons will require practices that strictly follow traditional cultural norms, whereas for others they may adapt to technical workshops with presentation of the results of complicated analysis. Each group of stakeholders may require particular methods to be involved in the processes related to ensuring representation. A number of indigenous communities share a special relationship with nature, thus frameworks that encourage natural and communal concord may be necessary. In order to pay attention to differences. There needs to be research prior to conducting social and environmental impact assessment at each stage of a project, as well as during the eventual daily operations of the process and procedures.

8) **Adoption of voluntary initiatives by corporations:** Corporations have been referred to as core organisations with the ability to direct international policies. With regard to the field of business ethics, CSR and other similar voluntary initiatives are important guidelines for corporations to adopt beyond the requirements of law. CSR requires that corporations take into account shareholders, affected communities and the general public on matters concerning human rights, employee welfare and climate change. Corporations can also adopt national or international codes to demonstrate a commitment to countering social and environmental challenges.

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